

A.

SEQ ID NO:1

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61 tttgaaaaaa gaatagaaaa gataaaaaaa gaagtaatca atgaccaga tgtaagcaa
121 tttttggaag cgcacgagc tgaattaacg aatgctatga ttgatgaaga cttaaattgtg
181 ttacaagagt ataaagatca acaaaaacat tatgacggtc ataaatttgc tgattgtcca
241 aatttcgtaa aggggcatgt gcctgagtta tatgttgata ataaccgaat taaaatacgc
301 tatttacaat gcccatgtaa aatcaagtac gacgaagaac gctttgaagc tgagctaatt
361 acatctcatc atatgcaacg agatacttta aatgccaaat tgaaagatat ttatatgaat
421 catcgagacc gtcttgatgt agctatggca gcagatgata tttgtacagc aataactaat
481 ggggaacaag tgaaaggcct ttacctttat ggtccatttg ggacaggtaa atcttttatt
541 ctaggtgcaa ttgcgaatca gctcaaactt aagaaggtag gttcgacaat tatttattta
601 ccggaattta ttagaacatt aaaagggtggc tttaaagatg gttcttttga aaagaaatta
661 catcgcgtaa gagaagcaaa cattttaatg cttgatgata ttggggctga agaagtgact
721 ccatgggtga gagatgaggt aattggacct ttgctacatt atcgaatggt tcatgaatta
781 ccaacattct ttagttctaa ttttgactat agtgaattgg aacatcattt agcgatgact
841 cgtgatgggtg aagagaagac taaagcagca cgtattattg aacgtgtcaa atctttgtca
901 acaccatact ttttatcagg agaaaatttc agaaacaatt ga

B.

SEQ ID NO:2

1 MGGGQSIMKQ FKSIINTSQD FEKRIEKIKK EVINDPDVKQ FLEAHRAELT NAMIDEDLNV
61 LQEYKDQQKH YDGHKFADCP NFVKGHVPEL YVDNNRIKIR YLQCPCKIKY DEERFEAELI
121 TSHHMQRDTL NAKLKDIYMN HRDRLDVAMA ADDICTAITN GEQVKGLYLY GPFGTGKFSFI
181 LGAIANQLKS KKVRSTIIYL PEFIRTLKGG FKDGSEFEKL HRVREANILM LDDIGAEVET
241 PWVRDEVIGP LLHYRMVHEL PTFFSSNFDY SELEHHLAMT RDGEEKTKAA RIIERVKSLS
301 TPYFLSGENF RNN

Fig. 1

Figure 2A

SEQ ID NO : 3

Complete genome sequence of bacteriophage 77

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1   gatcaaaaata cttggggaac ggtaggggag taaacttcgc gataatttta aaaattcatg
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301 aggcgccacc atatgaaagg gaaagaccag tagccaaact atttaatgct agagatgctg
361 catatcaaaa aataatcaaa caattatcgg atttattgcc cgaagagaaa gaagacacag
421 aaacgccatc tgatgattac ctatgattag taataaatac gttgatgaat atataaattt
481 gtggaaacaa ggaaagataa ttttaaataa agaaagaatt gatctcttta attatctaca
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721 gggacgtgga ggcgggaaaa acggtctaata agtgctattt agtgattttc tttctacgcc
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961 gggtatttga tataacacat caaacacaaa acccaaagac ggtggacgtg aggggtgtgt
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1081 attaggtaaa aagaaaaata gaagaacgtt ttatataagt actgatgggt ttgttagaga
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1321 gctaagcacg attgaagaag aatataacga ttaccattc aaccgttcaa ataagcccga
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1561 cgatgattac atttggttag gacattcgtt tgtaagacaa gggtttttg atgatgtcaa
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1681 tgtcattgaa attgaatata tagttgattg gtttttaaag gctagagaaa aatatgggct
1741 tgaaaaagtc atagctgata attatagaac tgatattgta agacgtgcgt ttgaggatgc
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1861 tatcgatata atgtttgcga aacataacgt aatatatgga gacaatcctt tgatgcgttg
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2221 tttagcgatt gatagttgta ttgaatttgt tgcgcgagct gtcgctcaaa gtcattttta
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2341 aaatactgac ttatcaagcg atagtttttg gcaacaagtt atatataaac taatttatga
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2461 cagagaagag tacgctttgt atgatgatat attcaaagat gtaacgggta aagattatac
2521 ttatcaacgt actttcacia tgcaagaggt catatattta aagtacaaca acaataaagt
2581 gacacacttt gtagaaagtc tattcgaaga ttacgggaaa atattcggaa gaatgatagg
2641 tgcacaatta aaaaactatc aaataagagg gattttgaaa tctgcctcta gcgcatatga
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Figure 2B

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2881	aaatgttgcg	ttgatgattg	gtataacctcc	aggtttgatt	tacggagaaa	cagctgattt
2941	ggaaaaaaac	acgcttgat	ttgagaagtt	ctgtttaaca	cctttattaa	aaaagattca
3001	gaacgaatta	aacgcgaaac	tcataacaca	aagcatgtat	ttgaaagata	caagaataga
3061	aattgtcggg	gtgaataaaa	aagaccact	tcaatatgct	gaagcaattg	acaaacttgt
3121	aagttctggg	tcattttacaa	ggaatgaggt	gcggtattatg	ttaggtgaag	aaccatcaga
3181	caatcctgaa	ttagacgaat	acctgattac	taaaaactac	gaaaaagcta	acagtgggta
3241	aaatgatgaa	aaagaaaaag	atgaaaacac	tttgaaagg	ggtgatgaag	atgaaagcgg
3301	agattaaagg	cgtcatcggt	tccaacgaag	ataaatgggt	ttacgaaatg	cttggtatgg
3361	attcgacttg	tcctaaagat	gttttaacac	aactagaatt	tagtgatgaa	gatggtgata
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3481	gagctcataa	aggcaaagt	aatgttcgta	tcacagcaat	agcagcaagt	gcggcatcgc
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3601	atccttcaag	tattgcgcaa	ggagaagtga	aagatctaaa	tcattgctgca	gaaacattag
3661	aacatggttg	tcaaataatg	gctgaggcat	atgcgggttag	agctggtaaa	aacaaacaag
3721	aacttataga	aatgatggct	aaggaaacgt	ggctaaatgc	tgatgaagcc	attgaacaag
3781	gttttgcgga	tagtaaaatg	tttgaaaacg	acaatatgca	aattgtagca	agcgatacac
3841	aagtgttatc	gaaagatgta	ttaaatcgtg	taacagcttt	ggtaagtaaa	acgccagagg
3901	ttaacattga	tattgacgca	atagcaaata	aagtaattga	aaaaataaat	atgaaagaaa
3961	aggaatcaga	aatcgatggt	gcagatagta	aattatcagc	aaatggattt	tcaagattcc
4021	ttttttaata	caaaaatagg	aggctataaa	atgactataa	atttatcgga	aacattcgca
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4141	gaattgtacg	gtgacatgat	taaccaacta	tttgaagaaa	ctaaattaca	agcaaaaagca
4201	gaagctgaaa	gagtttctag	tttacctaaa	tcagcacaaa	ctttgagtgc	aaaccaaaaga
4261	aatttcttta	tggatatcaa	taagagtgtt	ggatataaag	aagaaaaact	tttaccagaa
4321	gaaacaattg	atagaatctt	cgaagattta	acaacgaatc	atccattatt	agctgactta
4381	ggtattaaaa	atgctgggtt	gcgtttgaag	ttcttaaaat	ccgaaacttc	tggcgtgggt
4441	gtttggggta	aaatctatgg	tgaaattaaa	ggtcaattag	atgctgcgtt	cagtgaagaa
4501	acagcaattc	aaaataaatt	gacagcgttt	gttgttttac	caaaagattt	aaatgatttt
4561	ggtcctgcgt	ggattgaaag	atttgttcgt	gttcaaatcg	aagaagcatt	tgcaagtggcg
4621	cttgaaaactg	cgttcttaaa	agggtactgg	aaagaccaac	cgattgggtt	aaaccgtcaa
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5281	aggggagttg	tatccagctg	aagggtataa	caatcctcgt	gttgaattgt	tgacaaatca
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5641	aagaattgat	acttatacgc	gctagatatg	cttatcaaga	tttattagaa	cacttcaacg
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Figure 2C

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5881	agctgttggg	cgagtattga	tgggtgtctg	ttacgtgaat	tagaacaagc	tatctcaaac
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6121	gtgtgaaagt	gacaggtgat	aaagcattag	aaagagaatt	agaaaaacat	tttggcataa
6181	aagagatggg	aaaagttcaa	gataaggcgt	taatagctgg	tgctaaggta	attgttgaag
6241	aaataaaaaa	acaactcaaa	ccttcagaag	actcaggagc	actgattagt	gagattgggtc
6301	gtactgaacc	tgaatggata	aaggggaaac	gtactgttac	aattaggtgg	cgtgggcctt
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6541	tcataaagt	attagtcaag	acagaattat	tagagagcac	gtaaataatca	ataatattaa
6601	gttcaataaa	taccctaagt	taaaagatac	tgatgtacct	tttattgtta	ttgacgatat
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6901	cattttttat	aaggaggaaa	attaaatggc	agtaaaacat	gcaagtgcgc	caaaggcgta
6961	tattaacatt	actggtttag	gtttcgctaa	attaacgaaa	gaaggcgcg	aattaaaata
7021	tagtgatatt	acaaaaacaa	gaggattaca	aaaaattggg	gttgaaactg	gtggagaact
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8581	attctgactt	aaaattaaca	ggcaacaact	tcaaatatac	cgaaaaatca	actgatagtt
8641	acaaacaaag	gattaaagaa	cttgatggaa	ctatcacagg	ttataagaaa	aacgttgatg
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Figure 2D

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8881	tggcagaaaag	tggtcgggga	aaaaccagta	aagtttttga	aagtatggga	cctaaattaa
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9181	aagttaatac	aagggttaggt	tttacaggta	aagaacttga	aatgccaca	gagtcattct
9241	tgaatttcag	tcatataaca	ggttctgacg	gtgtgcaagc	cgtacagtta	attaccctg
9301	caatgggcca	tgcaggatc	gaagcaagt	aatatcaaag	tgttttggat	atggtagcaa
9361	aagcggcgca	agctagtggg	ataagtgttg	atacattagc	tgatagtatt	actaaatacg
9421	gcgctccaat	gagagctatg	ggctttgaga	tgaaagaatc	aattgcttta	ttctctcaat
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9541	attggggtaa	agctggtaaa	aaccaagag	aagaatttaa	gaagacatta	gcagaaattg
9601	aaaagacgcc	ggatatagct	agcgcaacaa	gttttagcgat	tgaagcattt	ggtgcaaagg
9661	caggtcctga	tttagcagac	gctattaaag	gtggtcgctt	tagttatcaa	gaatttttaa
9721	aaactattga	agattcccaa	ggcacagtaa	accaaacatt	taaagattct	gaaagtggct
9781	ccgaaagatt	taaagtagca	atgaataaat	taaaattagt	aggtgctgat	gtatgggctt
9841	ctattgaaag	tgcgtttgct	cccgtaatgg	aagaattaat	caaaaagcta	tctatagcgg
9901	ttgattgggt	ttccaattta	agtgatgggt	ctaaaagatc	aattgttatt	ttcagtggta
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10321	cgatattcagc	aatagttgat	ttcgcaaaaag	atatttgag	tcaaatcaat	ggattcttta
10381	atgaaaacgg	aattttccatt	gttcaagcac	ttcaaaaatat	atgcaacttt	attaaagcga
10441	tatttgaaatt	tatttttaaat	tttgtaatta	aaccaattat	gttcgcgatt	tggcaagtga
10501	tgcaatttat	ttggccggcg	gttaaaagcct	tgattgtcag	tacttgggag	aacataaaaag
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10741	actttggcgg	gttgctaaaa	ggattgatag	caggaatttg	ggacgtaata	agaagtatat
10801	tcagtaaatc	tttatcagca	atttggaatg	caacaaaaag	tatttttgga	tttttattta
10861	atagcgtaaa	atcaattttc	acaaatatga	aaaattgggt	atctaatact	tgagcagta
10921	tccgtacgaa	tacaatagga	aaagcgcagt	cattatttag	tggcgtaaaa	tcaaaattta
10981	ctaatttatg	gaatgcgacg	aaagaaattt	ttagtaattt	aagaaattgg	atgtcaaata
11041	tttggaattc	cattaaagat	aatacggtag	gaattgcaag	ccgtttatgg	agtaaggtag
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11161	atattcgccg	tatggtaagc	gctattaaaa	aaggacttaa	taaattaatc	gacggtttaa
11221	actgggtcgg	tggttaagtg	ggaatggata	aaatacctaa	gttacacact	ggtacagagc
11281	acacacatac	tactacaaga	ttagttaaga	acggttaagat	tgcacgtgac	acattcgcta
11341	cagttgggga	taagggacgc	ggaaatgggtc	caaatgggtt	tagaaatgaa	atgattgaat
11401	tccctaacgg	taaacgtgta	atcacaccta	atacagatac	taccgcttat	ttacctaaag
11461	gctcaaaagt	atacaacggt	gcacaaactt	attcaatggt	aaacggaacg	cttccaagat
11521	ttagtttagg	tactatgtgg	aaagatatta	aatctgggtg	atcatcggca	tttaactgga
11581	caaaagataa	aataggtaaa	ggtagcaaat	ggcttggcga	taaagttggc	gatgttttag
11641	attttatgga	aaatccaggc	aaacttttaa	attatatact	tgaagctttt	ggaattgatt
11701	tcaattcttt	aactaaaggt	atgggaattg	caggcgacat	aacaaaagct	gcatggtcta

Figure 2E

11761	agattaagaa	aagtgtact	gattggataa	aagaaaattt	agaagctatg	ggcgggtggcg
11821	attttagtcgg	cggaatatta	gaccctgaca	aaattaatta	tcattatgga	cgtaccgcag
11881	cttataccgc	tgcaactgga	agaccatttc	atgaagggtg	cgattttcca	tttgtatatc
11941	aagaagttag	aacgccgatg	ggtggcgagac	ttacaagaat	gccatttatg	tctggtgggt
12001	atggtaatta	tgtaaaaatt	actagtggcg	ttatcgatat	gctatttgcg	catttgaaaa
12061	acttttagcaa	atcaccacct	agtggcacga	tggtaaagcc	cggtgatggt	gttggtttaa
12121	ctggtaatac	cggatttagt	acaggaccac	atttacattt	tgaaatgagg	agaaatggac
12181	gacattttga	ccctgaacca	tatttaagga	atgctaagaa	aaaaggaaga	ttatcaatag
12241	gtgggtggcgg	tgctacttct	ggaagtggcg	caacttatgc	cagtcgagta	atccgacaag
12301	cgcaaagtat	tttaggtggg	cgttataaag	gtaaattgat	tcatgaccaa	atgatgcgcg
12361	ttgcaaaacg	tgaaagtaac	taccagtcaa	atgcagtga	taactgggat	ataaatgctc
12421	aaagaggaga	cccatcaaga	ggattattcc	aatcatcgg	ctcaactttt	agagcaaacg
12481	ctaaacgtgg	atatactaac	tttaataatc	cagtacatca	aggtatctca	gcaatgcagt
12541	acattgttag	acgatatggt	tgggggtggt	ttaaacgtgc	tggtgattac	gcataatgcta
12601	caggtggaaa	agtttttgat	ggttggtata	acttaggtga	agacgggtcat	ccagaatgga
12661	ttattccaac	agatccagct	cgtagaaatg	atgcaatgaa	gattttgcat	tatgcagcag
12721	cagaagtaag	agggaaaaaa	gcgagtaaaa	ataagcgtcc	tagccaatta	tcagacttaa
12781	acgggtttga	tgatcctagc	ttattattga	aatgattga	acaacagcaa	caacaaatag
12841	ctttattact	gaaaatagca	caatctaacg	atgtgattgc	agataaagat	tatcagccga
12901	ttattgacga	atacgctttt	gataaaaagg	tgaacgcgtc	tatagaaaag	cgagaaaggc
12961	aagaatcaac	aaaagtaag	tttagaaaag	gaggaattgc	tattcaatga	tagacactat
13021	taaagtgaac	aacaaaacaa	ttccttggtt	gtatgtcgaa	agaggggttg	aaataccctc
13081	ttttaattat	gttttaaaaa	cagaaaatgt	agatggacgt	tcgggggtcta	tatataaagg
13141	gcgtaggcct	gaatcttata	gttttgatat	acctttggtg	gtacgtaatg	actattttatc
13201	tcacaacggc	attaaaacac	atgatgacgt	cttgaatgaa	ttagtaaagt	tttttaacta
13261	cgaggaacaa	gttaaattac	aattcaaate	taaagattgg	tactggaacg	cttatttcga
13321	aggaccaata	aagctgcaca	aagaatttac	aatacctgtt	aagttcacta	tcaaagtagt
13381	actaacagac	ccttacaaat	attcagtaac	aggaaataaa	aatactgcga	tttcagacca
13441	agtttcagtt	gtaaatagt	ggactgctga	cactccttta	attggtgaag	cccagcaat
13501	taaaccatct	agttacttta	tgattactaa	aatgatgaa	gattatttta	tgggttggtga
13561	tgatgaggta	accaaagaag	ttaaggatta	catgcctcct	gtttatcata	gtgagtttcg
13621	tgattttcaa	ggttggacta	agatgattac	tgaagatatt	ccaagtaatg	acttaggtgg
13681	taaggctcggc	ggtgactttg	tgatatccaa	tcttggcgaa	ggatataaag	caactaattt
13741	tcctgatgca	aaagggtggg	ttggtgctgg	cacgaaacga	gggctcccta	aagcgatgac
13801	agattttcaa	attacctata	aatgtattgt	tgaacaaaaa	ggtaaagggtg	ccggaagaac
13861	agcacaacat	atztatgata	gtgatggtaa	gttacttgct	tctattgggt	atgaaaataa
13921	atatcatgat	agaaaaatag	gacatattgt	tgttacgttg	tataaccaa	aaggagaccc
13981	caaaaagata	tacgactatc	agaataaacc	gataatgtat	aacttgga	gaatcggtgt
14041	ttatatgcgg	ctcagaagag	taggtaataa	attttctatt	aaaacttgga	aatttgatca
14101	cattaaagac	ccagatagac	gtaaacctat	tgatatggat	gagaaagagt	ggatagatgg
14161	cggttaagttt	tatcagcgtc	cagcttctat	catagctgtc	tatagtgcga	agtataacgg
14221	ttataagtgg	atggagatga	atgggttagg	ttcattcaat	acggagattc	taccgaaacc
14281	gaaaggcgca	agggatgtca	ttatacaaaa	aggtgattta	gtaaaaatag	atatgcaagc
14341	aaaaagtgtt	gtcatcaatg	aggaaccaat	gttgagcgag	aaatcgtttg	gaagtaatta
14401	tttcaatgtt	gattctgggt	acagtgaatt	aatcatacaa	cctgaaaacg	tctttgatac
14461	gacggttaaa	tggcaagata	gatatttata	gaaaggagat	gagagtgtga	tacatgtttt
14521	agatttttaac	gacaagatta	tagatttcct	ttctactgat	gacccttcct	tagttagagc
14581	gattcataaa	cgtaatgtta	atgacaattc	agaaatgctt	gaactgctca	tatcatcaga
14641	aagagctgaa	aagttccgtg	aacgacatcg	tgttattata	agggattcaa	acaaacaatg
14701	gcgtgaattt	attattaact	gggttcaaga	tacgatggac	ggctacacag	agatagaatg

Figure 2F

14761	tatagcgtct	tatcttgctg	atataacaac	agctaaaccg	tatgcaccag	gcaaatttga
14821	gaaaaagaca	acttcagaag	cattgaaaga	tgtgttgagc	gatacagggt	gggaagtttc
14881	tgaacaaacc	gaatacgaag	gcttacgtac	tacgtcatgg	acttcttatc	aaactagata
14941	tgaagtttta	aagcaattat	gtacaaccta	taaaatgggt	ttagattttt	atattgagct
15001	tagctctaag	accgtcaaag	gtagatatgt	agtactcaaa	aagaaaaaca	gcttattcaa
15061	aggtaaagaa	attgaatatg	gtaaagattt	agtcgggtta	actaggaaga	ttgatatgtc
15121	agaaatcaaa	acagcattaa	ttgctgtggg	acctgaaaat	gacaaaagga	agcgtttaga
15181	gctagttgtg	acagatgacg	aagcgcgaag	tcaattcaac	ctacctatgc	gctatatttg
15241	ggggatatat	gaaccacaat	cagatgatca	aaatatgaat	gaaacacgat	taagttcttt
15301	agccaaaaca	gagttaaata	aacgtaagtc	ggcagttatg	tcatatgaga	ttacttctac
15361	tgatttgga	gttacgtatc	cgcacgagat	tatatcaatt	ggcgatacag	tcagagtaaa
15421	acatagagat	tttaacccgc	cattgtatgt	agaggcagaa	gttattgctg	aagaatataa
15481	cataatttca	gaaaatagca	catatacatt	cgggtcaacct	aaagagttca	aagaatcaga
15541	attacgagaa	gagtttaaca	agcgattgaa	cataatacat	caaaagttaa	acgataatat
15601	tagcaatatc	aacactatag	ttaaagatgt	tgtagatggg	gaattagaat	actttgaacg
15661	caaaatacac	aaaagtgata	caccgccaga	aatccagtc	aatgatatgc	tttgggatga
15721	tacaagtaac	cctgatgttg	ctgtcttgcg	tagatattgg	aatgggtcgat	ggattgaagc
15781	aacaccaaag	gatgttgaaa	aattaggtgg	tataacaaga	gagaaagcgc	tattcagtga
15841	attaacaagt	atttttatta	atttatctat	acaacacgct	agtcttttgt	cagaagctac
15901	agaattactg	aatagcgagt	acttagtaga	taatgatttg	aaagcggact	tacaagcaag
15961	tttagacgct	gtgattgatg	tttataatca	aattaaaaat	aatttagaat	ctatgacacc
16021	cgaaactgca	acgattgggc	gggtggtaga	tacacaagct	ttatttcttg	agtatagaaa
16081	gaaattacaa	gatgtttata	cagatgtaga	agatgtcaaa	atcgccattt	cagatagatt
16141	taaattatta	cagtcacaat	acactgatga	aaaatataaa	gaagcgttgg	aaataatagc
16201	aacaaaattt	gggttaacgg	tgaatgaaga	tttgcagtta	gtcggagaac	ctaattgttg
16261	taaatcagct	attgaagcag	ctagagaatc	cacaaaagaa	caattacgtg	actatgtaaa
16321	aacatcggac	tataaaacag	acaaagacgg	tattgttgaa	cgttttagata	ctgctgaagc
16381	tgagagaacg	actttaaaag	gtgaaatcaa	agataaaagt	acgttaaagc	aatatcgaaa
16441	cggattggaa	gaacaaaaac	aataactga	tgaccagtta	agtgatttgt	ccaataatcc
16501	tgagattaaa	gcaagtattg	aacaagcaaa	tcaagaagcg	caagaagctt	taaaatcata
16561	cattgatgct	caagatgatc	ttaaagagaa	ggaatcgcaa	gcgtatgctg	atggtaaaat
16621	ttcggaagaa	gagcaacgcg	ctatacaaga	tgctcaagct	aaacttgaag	aggcaaaaaca
16681	aaacgcagaa	ctaaaggcta	gaaacgctga	aaagaaagct	aatgcttata	cagacaacaa
16741	ggtcaaagaa	agcacagatg	cacagaggaa	aacattgact	cgctatgggt	ctcaaattat
16801	acaaaatggg	aaggaaatca	aattaagaac	tactaaagaa	gagtttaagt	caaccaatcg
16861	tacactttca	aatatatatta	acgagattgt	tcaaaatggt	acagatggaa	caacaatcag
16921	atatgatgat	aacggagtg	ctcaagcttt	gaatgtgggg	ccacgtggta	ttagattaaa
16981	tgctgataaa	attgatatta	acggtaatat	agaaataaac	cttcttatcc	aaaatatgcg
17041	agataaaagta	gataaaaccg	atattgtcaa	cagtcttaat	ttatcaagag	agggtcttga
17101	tatcaatggt	aatagaattg	gaattaaagg	cggtgacaat	aacagatatg	ttcaaataca
17161	gaatgattct	attgaactag	gtggatttgt	gcaacgtact	tggagagggg	aacgttcaac
17221	agacgatatt	tttacgcgac	tgaaagacgg	tcacctaaag	tttagaaata	acaccgctgg
17281	cgggttcactt	tatatgtcac	attttggtat	ttcgacttat	attgatgggt	aagggtgaaga
17341	cgggtggttca	tctggtacga	ttcaatgggt	ggataaaaact	tacagtgata	gtggcatgaa
17401	tggtataaca	atcaattcct	atgggtggtg	cgttgcaacta	acgtcagata	ataatcgggt
17461	tggtctggag	tcttacgctt	catcgaatat	caaaagcaaa	caggcaccgg	tgtatttata
17521	tccaaacaca	gacaaagtgc	ctggattaaa	ccgatttgca	ttcacgctgt	ctaattgcaga
17581	taatgcttat	tcgagtgcg	gttatattat	gtttggttct	gatgagaact	atgattacgg
17641	tgcggttatc	aggttttcta	aagaaagaaa	taaagggtctt	gttcaaattg	ttaatggacg
17701	atatgcaaca	ggtggagata	caacaatcga	agcagggtat	ggcaaattta	atatgctgaa

Figure 2G

17761	acgacgtgat	ggtaataggt	atattcatat	acagagtaca	gacctactgt	ctgtaggttc
17821	agatgatgca	ggagatagga	tagcttctaa	ctcaatttat	agacgtactt	attcggccgc
17881	agctaatttg	catattactt	ctgctggcac	aattgggcgt	tcgacatcag	cgcgtaaata
17941	caagttatct	atcgaaaatc	aatataacga	tagagatgaa	caactggaac	attcaaaagc
18001	tattcttaac	ttacctatta	gaacgtgggt	tgataaagct	gagtctgaaa	ttttagctag
18061	agagctgaga	gaagatagaa	aattatcgga	agacacctat	aaacttgata	gatacgtagg
18121	tttgattgct	gaagaggtgg	agaatttagg	attaaaagag	tttgtcacgt	atgatgacaa
18181	aggagaaatt	gaaggtatag	cgtatgatcg	tctatggatt	catcttatcc	ctgttatcaa
18241	agaacaacaa	ctaagaatca	agaaattgga	ggagtcaaag	aatgcaggat	aacaaacaag
18301	gattacaagc	taatcctgaa	tatacaattc	attatttatc	acaggaaatt	atgaggttaa
18361	cacaagaaaa	cgcgatgtta	aaagcgtata	tacaagaaaa	taaagaaaat	caacaatgtg
18421	ctgaggaaga	gtaatcctta	gcactatttt	tatacaaaaa	tttaaggagg	tcatTTaatt
18481	atggcaaaaag	aaattatcaa	caatacagaa	aggtttatTT	tagtacaaat	cgacaaagaa
18541	ggtacagaac	gtgtagtata	tcaagatttc	acaggaagtt	ttacaacttc	tgaaatgggt
18601	aaccatgctc	aagatttttaa	atctgaagaa	aacgctaaga	aaattgcgga	gacgttaaatt
18661	ttgttatatc	aattaactaa	caaaaaacaa	cgtgtgaaag	tagttaaaga	agtagttgaa
18721	agatcagatt	tatctccaga	ggtaacagtt	aacactgaaa	cagtatgaaa	agctatgagt
18781	tagatactca	tagtctttat	tcttttagaa	agcgggtgta	ctgaattggg	gtgggttcaaa
18841	aaacacgaac	atgaatggcg	catcagaagg	ttagaagaga	atgataaaac	aatgctcagc
18901	acactcaacg	aaatttaaatt	aggtcaaaaa	acccaagagc	aagttaacat	taaattagat
18961	aaaaccttag	atgctattca	aaaagaaaga	gaaatagatg	aaaagaataa	gaaagaaaat
19021	gataagaaca	tacgtgatat	gaaaatgtgg	gtgcttggtt	tagttgggac	aatatttggg
19081	tcgctaatta	tagcattatt	gcgtatgctt	atgggcatac	aagagaggtg	attaccatgt
19141	tcggattaaa	ttttggagct	tcgctgtgga	cgtgtttctg	gtttggtaag	tgtaagtaat
19201	agttaagagt	cagtgtctcg	gcactggcct	tttatttttg	ataaaaaggag	caaacaaatg
19261	gatgcaaaaag	taataacaag	atacatcgta	ttgatcttag	cattagtaaa	tcaattctta
19321	gcgaacaaag	gtatttagccc	aattccagta	gacgatgaaa	ctatatcatc	aataatactt
19381	actgtagtcg	ctttatatac	aacgtataaa	gacaatccaa	catctcaaga	aggtaaatgg
19441	gcaaatcaaa	aattaaagaa	atataaagct	gaaaataagt	atagaaaagc	aacagggcaa
19501	gcgccaatTA	aagaagtaat	gacacctacg	aatatgaacg	acacaaatga	tttagggtag
19561	gtggttgata	tatgttaatg	acaaaaaatc	aagcagaaaa	atggtttgac	aattcattag
19621	ggaaacaatt	caaccacagat	ggttggatatg	gatttcagtg	ttatgattac	gccaatatgt
19681	tctttatgtt	agcgacaggc	gaaaggctgc	aaggtttata	tgcttataat	atcccgtttg
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19801	cgcaaaaagtt	ggatattgtc	gttttcccgt	caaagtatgg	tggcggagct	ggacacgttg
19861	aaattgttga	gagcgcaaat	ttaaatactt	tcacatcatt	tggTcaaaac	tggaaacggt
19921	aaggttggac	taatggcgtt	gcgcaacctg	gttggggTcc	tgaaactgtg	acaagacatg
19981	ttcattatta	tgacaatcca	atgtatttta	ttaggttaaa	cttcctaac	aacttaagcg
20041	ttggcaataa	agctaaaggt	attattaagc	aagcgactac	aaaaaaagag	gcagtaatta
20101	aacctaaaaa	aattatgctt	gtagccgggtc	atggttataa	cgatcctgga	gcagtaggaa
20161	acggaacaaa	cgaacgcgat	tttatacgta	aatatataac	gcctaataatc	gctaagtatt
20221	taagacatgc	aggacatgaa	gttgcatatt	acggTggctc	aagtcaatca	caagatatgt
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20341	ttaaatcaca	ggggtatgac	attgttctag	aaatacattt	agacgcagca	ggagaaaagcg
20401	caagtggTgg	gcatgttatt	atctcaagtc	aattcaatgc	agatactatt	gataaaaagta
20461	tacaagatgt	tattaaaaat	aacttaggac	aaataagagg	tgtgacacct	cgtaatgatt
20521	tactaaatgt	taatgtatca	gcagaaataa	atataaatta	tcgtttatct	gaattaggtt
20581	ttattactaa	taaaaatgat	atggattgga	ttaagaaaaa	ctatgacttg	tattctaaat
20641	taatagccgg	tgcgattcat	ggtaagccta	taggtggTtt	ggtagctggT	aatgttaaaa
20701	catcagctaa	aaacaaaaaa	aatccaccag	tgccagcagg	ttatacactc	gataagaata

Figure 2H

20761	atgtccctta	taaaaaagaa	caaggcaatt	acacagtagc	taatgttaaa	ggtaataatg
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20881	ttacgtatga	cgggtgcatat	tgtattaatg	gttatagatg	gattacttat	attgctaata
20941	gtggacaacg	tcgttatata	gcgacaggag	aggtagacaa	ggcaggtaat	agaataagta
21001	gttttggtta	gttttagcacg	atttagtatt	tacttagaat	aaaaattttg	ctacattaat
21061	tatagggaat	cttacagtta	ttaaataact	atltggatgg	atgttaatat	tcctatacac
21121	tttttaacat	ttctctcaag	atltaaatgt	agataacagg	cagggtacttc	gggtacttgcc
21181	tattttttta	tgttatagct	agccttcggg	ctagtttttt	gttatgatgt	gttacacatg
21241	catcaactat	ttacatctat	ccttggttcac	ccaagcatgt	cactggatgt	tttttcttgc
21301	gatagagagc	atagttttca	tactactccc	cgtagtatat	atgactttag	cattcccgtat
21361	taacagttta	cgggggtgctt	ttatgttata	attgctttta	tatagtagga	gtgaactata
21421	tagccgggca	gaggccatgt	atctgactgt	tgggtcccaca	ggagacatct	tccttgtcat
21481	cactcgatac	atatatctta	acaacataga	aatgtttacat	tcgtataaac	cgtatcttaa
21541	tcgatacggg	tatatattatt	cccctacaac	caacaaaacc	acagatccta	ttaatttagg
21601	attgtgggta	ttttttgcgt	ttttttgggg	caaaaaaagg	gcagattatt	tgaaaaaagg
21661	caaacgcttg	tggaaaagct	aaaagggttaa	aaatgacaaa	aaccttgata	caacagtgtt
21721	tttggacgct	cgtgtacggt	agagaatgac	cggtttacca	tcatacaagg	gtgggattaa
21781	cttgtgttaa	aaagccttta	atatcagttg	ttacaaagga	tttgtagcgt	ctttaaaaat
21841	aaaaaagggc	agaaaaagg	cagatacctt	ttagtacaca	agtttttcta	atltttgtct
21901	taactctctg	tccattttct	ctgttacatg	tgtatacacc	tttatagtcg	ttttttcatc
21961	tgtatgtcct	actcttttca	taattgcttt	taacgatata	ttcatttccg	ccaataaact
22021	tatgtgtgta	tgccttagtg	tgtgagtagt	aactttttta	tttatattta	atgattctgc
22081	agctgaggac	aatcgtttgt	ttatcctact	gccttgcata	ggatttcctt	ggcaagttgt
22141	gaatataaac	cctctatcaa	catagcttgg	ttcccattgt	tgcattcttt	tattttctaa
22201	cattattttt	ttcaatacat	ttgctatcct	tgaattgatg	gcgatttttc	ttcttgaacc
22261	tgcggctctta	gtagtatctt	tgtgacccaa	tccagcatta	catttgattc	tgtgaatagt
22321	gccattaata	gcgatcggtt	tatttttgag	gtcaacatct	ttacttggga	gagctaataa
22381	ctcacctatg	cgcatacctg	ttaaagcttg	aacttctaca	gccccagcaa	ctaaaatacg
22441	agctctatac	tgcattgttat	tatcgttcag	tataaaatcg	cgtatctgta	ttacctgttc
22501	catctctaaa	tagttataca	ttttcgcttc	ttctttttct	atatcttcta	tcgtcttact
22561	cttcttttgg	agtgtgacgc	tattttaatat	gtgttcggtt	ggataattgt	aaaatttaac
22621	ggcgatattta	atagcttctt	tcatatgtcc	aagttgacgc	tttacctgat	ttgcagaata
22681	tacgttttgat	aattttgttaa	taaatgtttg	catgtacttt	gtatcaattt	tgtttaaaag
22741	taaattttga	gaactgttct	ttttgatgtt	tttgattctt	gttttcaaat	tatcaagcgt
22801	cgttacttta	aagccagatg	tttttatatg	atattcaagc	cattcatcta	ataacgcgtg
22861	aaaagtcaaa	gttttttaatt	cgcttgacga	cttgttggtt	agtttttctt	ttattttttc
22921	ttctaaacga	aacattgcct	ctttttgcga	ttgctttgta	ttcttattca	agacaacact
22981	tacacgtttc	catttatctg	tatacggatc	tttgtatttc	tcgtagtatc	tatacttcgt
23041	ttcattgttc	ttattttttaa	atlttttcaa	ccacatttta	catccctcct	caaaattggc
23101	aaaaaataat	aagggtaggc	gggctaccca	tgaattgtgt	ataaaaaaag	acgcctgtat
23161	aaaatacaga	cgccacttat	aattataaga	ttacatgggt	aattaccaaa	aatggtaacg
23221	aatatatacg	tgtttttaaag	gataaacctt	taatatatta	aaattatata	atcttatata
23281	agggatctgc	aatatattat	tattaattct	atlttatcagt	aacataatat	ccgaagaatc
23341	tattactgga	ttttttaattt	tttggggtaa	aacttttctt	atgcgaaact	tactaatcgg
23401	ctggaaagaa	tttatgcaag	cgtaactatt	accttttaat	ttttttacct	tatcaattgc
23461	tgatactatg	ttattaatgt	ttctgtcaat	tttatttaat	ttattttcaa	tttctaaact
23521	atcagatata	aattcaataa	aataatcttt	agtgatgaat	tctgtgttgt	ttttttggta
23581	ttttttatcg	aaaacttctt	ttaatatagc	tgaattattt	tgcgcgctaa	ttaaatttaa
23641	aaacaatctt	aaataatact	cccatttcaa	atcaaaattc	atcttttaaat	actttttgtt
23701	ttcttttagag	gataagggaa	taacattttac	tatatcctcc	gtattagaat	cattttttatt

Figure 2I

23761	catcactatt	gcaaagtgtg	aattagaaaa	ttctttatta	acgtttatac	cgaaatctac
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23881	aaatctcttg	agtaaatagt	gaatatctga	atctaacttt	ttaaattttg	gatttccaga
23941	agttttttaat	ttattaatgc	gtttttctat	attatgcgtc	atcattttctc	ctttattctc
24001	gctcacactc	tcaccaccat	tcaacgtcta	cacttgtagg	cgttttttga	ttagtaaaat
24061	cataatgaat	cttctttggt	taacttatcg	ccatctattt	tttgtgaaat	aaattccaag
24121	tattttacgcg	cattatgtga	cgataaatct	ttaggtaact	cataagtga	tgggttgatta
24181	ccactagtta	aaacttcata	tactatagtt	tcttttttta	ttttgcaatt	agttattttc
24241	attataaaact	cctttttaaac	actgctgaaa	tagacgtctt	tttcaaataa	gcatgattaa
24301	tacttttaatt	cttttaatcca	catatattta	aaagtgaggt	agtaggtaat	aaatataaga
24361	cttaaagtta	agattgcttt	tttcatgtca	atttctcctt	tgtttatatt	tatattaaag
24421	cgctaaatat	acgttattaa	tcacaataca	actttgcca	ttactttaat	atcactaaac
24481	gaagcgactt	tgatatcatc	atacttcgga	tttagagata	ccaaattaat	atagtcttcg
24541	catatatcta	cacgcttgat	aagacttact	ccatctaata	caacgagtg	aattgtacca
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24721	aaaaataactt	cttcatgcaa	tatgtcatca	tataattctt	ctcctatgcc	agcaccagtt
24781	gcaccacatg	caatatacga	tactagttta	gactctttat	attcatctat	agaagtgact
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25201	ttttgcattg	gtaatgcctc	cttgaaattc	attatatagg	aagggaataa	aaaatcaata
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25321	ttatagttca	aatgtttgaa	cttaggaggt	gattatttga	atactaatac	aacttttgat
25381	ttttcgttat	tgaacggtaa	gatagtcgaa	gtgtactcga	cacaatttaa	ctttgctata
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25981	cagatgtgag	cgagagctgg	cgatgatatg	agccgcgttt	aaatacattc	gatagtcatt
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26161	tattttgtag	gaaaagatat	tgctgagatt	ttaggatatg	caagatcaaa	caatgccatt
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26401	gatgtcctac	cagctattcg	caaacacggt	atatacgcaa	cagacaatgt	aattgaacaa
26461	acattaaaag	atccagacta	catcattaca	gtgttgactg	agtataagaa	agaaaaagag
26521	caaaacttac	ttttacaaca	gcaagtagaa	gttaacaaac	caaaagtatt	attcgctgac
26581	tcggtagctg	gtagtataaa	ttcaataact	gttgagaaac	tagcgaaaat	acttaacaa
26641	aacgggtgtg	atataggaca	aaacagattg	ttcaaatggg	taagaaataa	tggatatctc
26701	attaaaaaga	gtggagaaa	ttataactta	ccaactcaaa	agagtatgga	tctaaaaatc

Figure 2J

26761	ttggatatca	aaaaacgaat	aattaataat	ccagatgggt	caagtaaagt	atcacgtaca
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26881	acatcttaaa	aggaggaaca	caatggaaca	aatcacatta	accaaagaag	agttgaaaga
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27181	ccatattaga	aaattaacat	tatcaatttt	tggagtgaac	cttaattcag	acttgagtga
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27301	ctatgaaaag	agagtttcag	aattaactat	cgatgatttc	gaataaagga	ggaacaacaa
27361	atgttacaaa	aattttagaat	tgcgaaagaa	aaaaataaat	taaaactcaa	attactcaag
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29161	cgcaagtatc	gcaacattca	tgtactacaa	agaatgcttt	ttcaaagaat	aaaaaaactg
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29521	cagacgaaca	ggacagacta	attaacttag	tcatgaaatg	gtaggaggtc	gctatgaagc
29581	agactgtaac	ttatatcatt	cgtcataagg	atatgccaat	ttatataact	aacaaaccaa
29641	ctgataacaa	ttcagatatt	agttactcca	caaatagaaa	tagagctagg	gagtttaacg
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Figure 2K

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30121	aaacttagag	atatgacatt	gaatgatgtg	atgaaaaata	agtctaaaaa	accaacgttt
30181	aatgattggg	gagaagttgc	tgaacgaatt	gtcagtatgt	acagattaat	aggaaaactt
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30361	aaagctatta	cttctcaaag	tgatgtgtta	gctagggcaa	tgattgaaga	atttgatgat
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30601	aattatgaaa	atcacaggac	aagcgcaatt	tactaaagaa	acaaatcaag	aaaagtttta
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30721	caatgataga	gaaaatagat	atttcacaat	cgtatttgaa	aatgatgaag	gcaacaataa
30781	taaacataat	caatttgtac	cgccgtataa	atatgatttc	caagaaaaac	aattgattga
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Figure 2L

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35281	tgtggataaa	gaaaaagaag	cgctggcaga	ttacttatat	aacaatcctg	acgaaatact
35341	agagtatgac	aattttaaaaa	ttagaaacgt	aatgtagag	gtggaataaa	tgggcagtgt
35401	tgtaatcatt	aataataaac	catataaatt	taacaatttt	gaaaaagaa	ataatggcaa
35461	agcgtgggat	aatgctgga	attgtttcta	aacgtgttag	aggttggttg	gagttttcag
35521	aagctttaga	cgcgccttat	ggcatgcacc	taaaagaata	tagagaaatg	aaacaaatgg
35581	aaaagattaa	acaagcgaga	ctcgaacgtg	aattggaaaag	agagcgaaaag	aaagaggctg
35641	agctacgtaa	gaagaagcca	catttgttta	atgtacctca	aaaacattca	cgtgatccgt
35701	actgggtcga	tgtcacttat	aaccaaattgt	tcaagaaatg	gagtgaagca	taatgagcat

Figure 2M

35761	aatcagtaac	agaaaagtag	atatgaacaa	aacgcaagac	aacgttaagc	aacctgcgca
35821	ttacacatac	ggcgacattg	aaattataga	ttttattgaa	caagttacgg	cacagtaccc
35881	accacaatta	gcattcgcaa	taggtaatgc	aattaaatac	ttgtctagag	caccgttaaa
35941	gaatggtcac	gaggatttag	caaaggcgaa	gttttacgtc	gatagagtat	ttgacttggtg
36001	ggagtgatga	ccatgacaga	tagcggacgt	aaagaatact	taaaacattt	tttcggctct
36061	aagagatatac	tgtatcagga	taacgaacga	gtggcacata	tccatgtagt	aaatggcact
36121	tattacttttc	acggtcatat	cgtgccagggt	tggcaagggtg	tgaaaaagac	atttgataca
36181	gcggaagagc	ttgaaacata	tataaagcaa	agtgatttgg	aatatgagga	acagaagcaa
36241	ctaactttat	tttaaaaggg	cggaaacaat	gaaaatcaaa	attgaaaaag	aaatgaattt
36301	acctgaactt	atccaatggg	cttgggataa	ccccaagtta	tcaggtaata	aaagattcta
36361	ttcaaatgat	gttgagcgca	actgttttgt	gacttttcat	gttgatagca	tcttatgtaa
36421	tgtgactgga	tatgtatcaa	ttaacgataa	atttactggt	caagaggaga	tataacaatg
36481	aaaatcaaag	ttaaaaaaga	aatgagatta	gatgaattaa	ttaaatgggc	gcgagaaaat
36541	ccggatctat	cacaaggaaa	aatatttttt	tcaacaggat	ttagtgatgg	attcgttcgt
36601	tttcatccaa	atacaaataa	gtgttcgacg	tcaagtttta	ttccaattga	tatccccttc
36661	atagttgata	ttgaaaaaga	agtaacggaa	gagactaagg	ttgatagggt	gattgaatta
36721	ttcgagattc	aagaaggaga	ctataactct	acactatatg	agaacactag	tataaaagaa
36781	tgtttatatg	gcagatgtgt	gcctaccaa	gcattctaca	tcttaaacga	tgacctaaact
36841	atgacgttaa	tctggaaaga	tggggagttg	ctagtatgat	gttgaaattt	aaagcttggg
36901	ataaagataa	aaaagtatatg	agtattattg	acgaaatcga	ttttaatagt	gggtacattt
36961	tgattttcaac	aggttataaa	agtttcaatg	aagtaaaact	attacaatac	acaggattta
37021	aagatgtgca	cgggtgtggag	atttatgaag	gggatattgt	tcaagattgt	tattcgagag
37081	aagtaagt	tatcgagt	aaagaaggag	ccttttatat	aacttttagc	aatgtaactg
37141	aattactaag	tgaaaatgac	gatattattg	aaattgttgg	aaatattttt	gaaaatgaga
37201	tgctattgga	ggttatgaga	tgacgttcac	cttatcagat	gaacaatata	aaaatctttg
37261	tactaactct	aacaagttat	tagataaact	tcacaaagca	ttaaaagatc	gtgaagagta
37321	caagaagcaa	cgagatgagc	ttattgggga	tatagcgaag	ttacgagatt	gtaacaaaga
37381	tctagagaag	aaagcaagcg	catgggtag	gtattgcaag	agcgttgaaa	aagatttaaat
37441	aaacgaattc	ggtaacgatg	atgaaagagt	taaattcgga	atggaattaa	acaataaaat
37501	ttttatggag	gatgacacaa	atgaataatc	gcgaaaaaat	cgaacagtc	gttattagt
37561	ctagtgcgta	taacggtaat	gacacagagg	ggttgctaaa	agagattgag	gacgtgtata
37621	agaaagcgca	agcgtttgat	gaaataactg	agggaatgac	aaatgctatt	caacattcag
37681	ttaaagaagg	tattgaactt	gatgaagcag	tagggattat	ggcagggtcaa	gttgtctata
37741	aatatgagga	ggaataggaa	aatgactaac	acattacaag	taaaactatt	atcaaaaaat
37801	gctagaatgc	ccgaacgaaa	tcataagacg	gatgcagggt	atgacatatt	ctcagctgaa
37861	actgtcgtac	tcgaaccaca	agaaaaagca	gtgatcaaaa	cagatgtagc	tgtgagtata
37921	ccagagggct	atgtcggact	attaactagt	cgtagtgggtg	taagtagtaa	aacgtattta
37981	gtgattgaaa	caggcaagat	agacgcggga	tatcatggca	atttagggat	taatatacaag
38041	aatgatgaag	aacgtgatgg	aatacccttt	ttatatgatg	atatagacgc	tgaattagaa
38101	gatggattaa	taagcatttt	agatataaaa	ggtaactatg	tacaagatgg	aagaggcata
38161	agaagagttt	accaaatacaa	caaaggcgat	aaactagctc	aattgggttat	cgtgcctata
38221	tggacaccgg	aactaaagca	agtggaggaa	ttcgaaagt	tttcagaacg	tggagcaaaa
38281	ggcttcggaa	gtagcggagt	gtaaagacat	cttagatcga	gttaaggagg	ttttggggaa
38341	gtgacgcaat	acttagtcac	aacattcaaa	gattcaacag	gacgaccaca	tgaacatatt
38401	actgtggcta	gagataatca	gacgtttaca	gttattgagg	cagagagtaa	agaagaagcg
38461	aaagagaagt	acgaggcaca	agttaaaaga	gatgcagtta	ttaaagtggg	tcagttgtat
38521	gaaaatataa	gggagtgtgg	gaaatgacgg	atgttaaaat	taaaactatt	tcaggtggag
38581	tttattttgt	aaaaacagct	gaaccttttg	aaaaatatgt	tgaaagaatg	acgagtttta
38641	atggttatat	ttacgcaagt	actataatca	agaaaccaac	gtatattaaa	acagatacga
38701	ttgaatcaat	cacacttatt	gaggagcatg	ggaaatgaat	cagctgagaa	ttttattaca

Figure 2N

38761	tgacggtagt	agtttgatat	tacatgaaga	tgaattat	aacgaaatag	tatttgTTTT
38821	ggacaatttt	agaaatgatg	atgactat	aacgatagaa	aaagattatg	gcagagaact
38881	tgtattgaac	aaagggtata	tagttgggat	caatgttgag	gaggcagatg	atgattaaca
38941	tacctaaaat	gaaattcccc	aaaaagtaca	ctgaaataat	caaaaaatat	aaaaataaag
39001	cacctgaaga	aaaggctaag	attgaagatg	atTTTTat	agaaattaaa	gataaagaca
39061	gtgaatttta	cagtcctacg	atggctaata	tgaatgaata	tgaattaagg	gctatgttaa
39121	gaatgatgcc	tagttttaatt	gatactggag	atgacaatga	tgattaaaaa	acttaaaaat
39181	atggatgggt	tcgacatcct	tattgttgga	atactgtcat	tattcggtat	attcgcat
39241	ctacttggtt	tcacattgcc	tatctataca	gtggctagtt	accaacacaa	agaattacat
39301	caaggaacta	ttacagataa	atataacaag	agacaagata	aagaagacaa	gttctatatt
39361	gtatttagaca	acaaacaagt	cattgaaaat	tccgacttat	tattcaaaaa	gaaatttgat
39421	agcgcagata	tacaagctag	gttaaaagta	ggcgataagg	tagaagttaa	aacaatcggt
39481	tatagaatac	actTTTTaaa	tttatatccg	gtcttatacg	aagtaaagaa	ggtagataaa
39541	caatgattaa	acaaatacta	agactattat	tcttactagc	aatgtatgag	ttaggtaagt
39601	atgtaactga	gcaagtgtat	attatgatga	cggctaata	tgatgtagag	gcgccgagtg
39661	attacgtctt	tcgagcggag	gtgagtgaat	aatgagaata	tttatttatg	atttgatcgt
39721	tttgctgttt	gctttcttaa	tatccatata	tattattgat	gatggagtga	taataaatgc
39781	attaggaatt	tttggtatgt	ataaaaattat	agattccttt	tcagaaaata	ttataaagag
39841	gtagataaaa	atgaacgagc	aaataatagg	aagcatatat	acttttagcag	gagggtgtgt
39901	gctttattca	gttaaagaga	tttttaggta	ttttacagat	tctaacttac	aacgtaaaaa
39961	aatcaattta	gaacaaatat	atccgatata	tttagattgt	tttaaaaagg	ctaaaaagat
40021	gattggagct	tatattat	caacagaaca	gcatgaattt	ttagattttt	ttgatattga
40081	agtctttaat	aatttagata	agcaaagttaa	aaaagcgtat	gaaaatgtta	ttggatttag
40141	acaaatgatt	aatttatcaa	atagagttaa	ggcaatggaa	gattttaaga	tgagtttcaa
40201	caatgaattt	agtacaaatc	agattttttt	taatccttct	tttgttatgg	aaacaattgc
40261	tattataaat	gaatatcaaa	aagatatatc	ttatttaaaa	aatataatta	ataaaaatgaa
40321	tgaaaataga	gcttataatc	atattgatag	ttttatcact	tcagagtacc	gacgaaaaat
40381	aaacgattat	aatctttatc	ttgataaatt	tgaagaacag	tttagtcaaa	agtttaaaat
40441	aaacagaact	tcgataaaa	aaagaattat	tattaattta	aacaagagga	gatttaaatg
40501	atgtggatta	ctatgactat	tgtatttgc	atattgctat	tagtttgtat	cagtattaat
40561	agtgatcgtg	caagagagat	acaagcactt	agatatatga	atgattatct	acttgatgaa
40621	gtagttaaaa	ctaaagggta	caacgggtta	gaagaataca	ggattgaatt	gaagcgaatg
40681	aataacgata	ttaaaaagta	atTTtatatta	tcggagggtat	tgcatggaat	gataaagatt
40741	gagaaacacg	atatcaaaaa	gcttgaagaa	tacattcagc	acatcgataa	ctatcgaaga
40801	gagttgaaga	tgcgagaata	tgaattactt	gaaagtcag	aaccagataa	tgccgggagct
40861	ggcaaaagta	atTTGCCggg	taaccgcgatt	gaacgatgtg	caataaagaa	gtttagtgat
40921	aacagggtaca	atacattaag	aaatatagtt	aacgggtgtag	atagattgat	aggtgaaagt
40981	gatgaggata	cgcttgagtt	attaagggtt	agatattggg	attgtcctat	tggttggtat
41041	gaatgggaag	atatagcaca	ttactttggg	acaagtaaga	caagtatat	acgtagaagg
41101	aatgcactga	tcgataagtt	agcaaagtat	attgggttatg	tgtagcggac	ttttacccta
41161	tgtaagtccg	cattaaaaca	gtttattatg	ttagtatcag	attaatat	aaagttatta
41221	aatgctaata	cgacgcata	acaagaggcg	catcactatg	tgatgtgtct	ttttatttat
41281	gaggtagtaa	catgttcaaa	ctaattgtaa	atacattact	acacatcaag	tatagatgag
41341	tcttgatact	acttaagtta	tataagggtga	aacattatga	tgactaaaga	cgaacgtata
41401	cgattctata	agtctaaaga	atggcaaata	acaagaaaaa	gagtgttaga	aagagataat
41461	tatgaatgtc	aacaatgtaa	gagagacggc	aagttaacga	catatgacaa	aagcaagcgt
41521	aagtcgttgg	atgtagatca	tatattatcg	ctagaacatc	atccggagtt	tgctcatgac
41581	ttaaacaatt	tagaaacact	gtgtattaaa	tgtcacaaca	aaaaagaaaa	gagatttata
41641	aaaaaagaaa	ataaatggaa	agacgaaaaa	tggtaaatac	ccccgggtca	aaaaaatcaa
41701	aagcgatc					

Phage: Bacteriophage 77
Minimal ORF size: 33 a.a.
ORFs "with" RBS.
Number of ORFs: 99

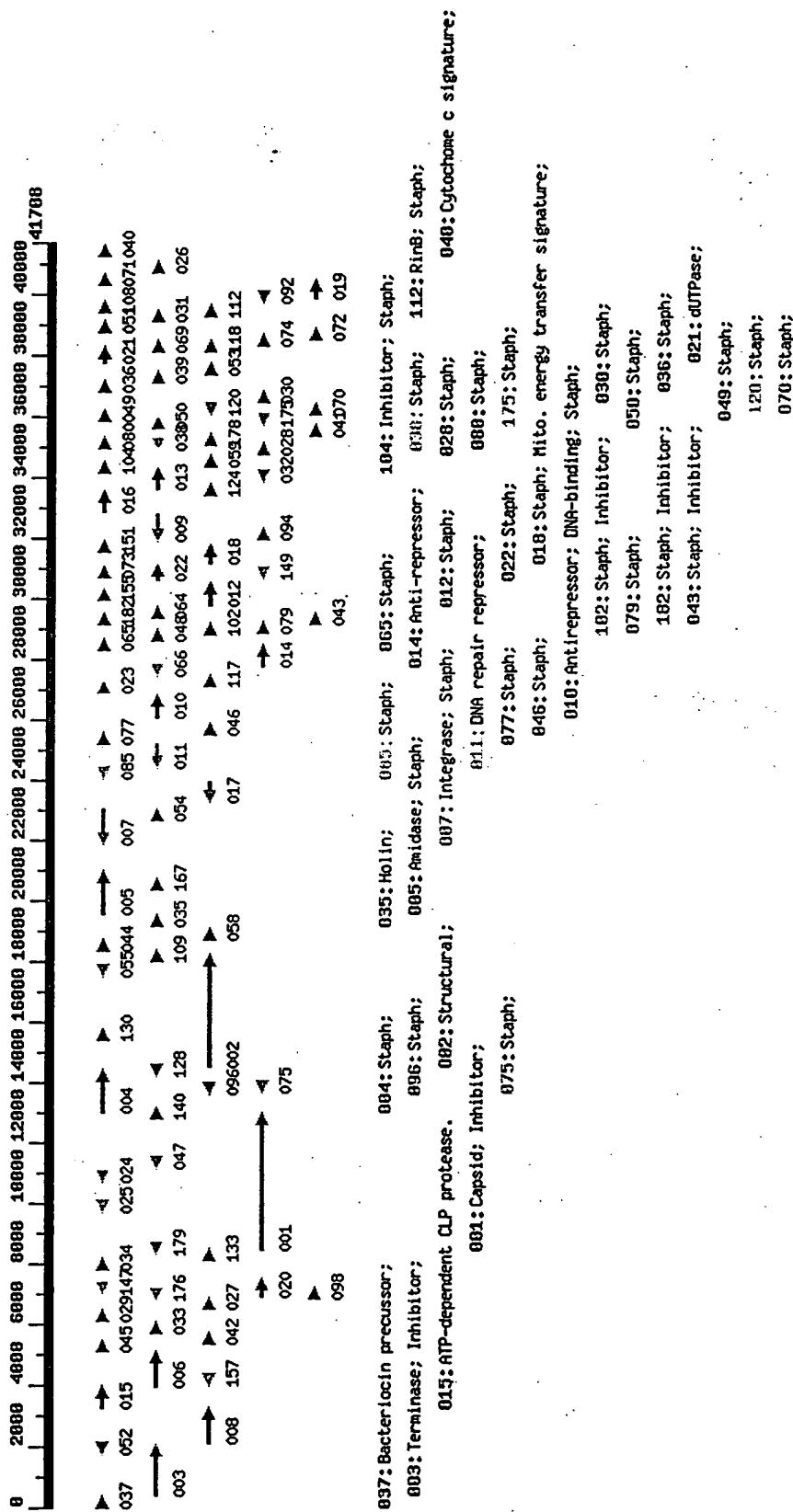


Fig. 4

P77ORF104

SEQ ID NO: 4

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1      atggtaacca aagaattttt aaaaactaaa cttgagtgtt cagatatgta cgctcagaaa
61     ctcatagatg aggcacaggg cgatgaaaat aggttggtacg acctatttat ccaaaaactt
121    gcagaacgtc atacacgccc cgctatcgtc gaatattaa
```

SEQ ID NO: 5

```
1      MVTKEFLKTK LECSDMYAQK LIDEAQGDEN RLYDLFIQKL AERHTRPAIV EY
```

Predicted Tryptic Peptide Masses of Conceptual ORF in Contig 1383:

```

1  M G G G Q S I M K q f k S I I N T S Q D F E K r I E K i k K 30
31 e v i n d p d v k Q F L E A H R a e l t n a m i d e d i n v 60
61 l q e y k D Q Q K h y d g h k F A D C P N F V K g h v p e l 90
91 y v d n n r l K i r Y L Q C P C K i k Y D E E R f e a e l i 120
121 t s n n m q r D T L N A K i k D I Y M N H R d r L D V A M A 150
151 A D D I C T A I T N G E Q V K g l y l y g p f g t g k S F I 180
181 L G A I A N Q L K s k K v r S T I I Y L P E F I R t i k G G 210
211 F K d g s f e k K i h r V R e a n n i m i d d i g a e e v t 240
241 p w v r D E V I G P L L H Y R m v h e l p t f f s s n f d y 270
271 s e l e h h l a m t r D G E E K t k A A R i e r V K s l s 300
301 t p y f l s g e n f r N N 313

```

Tryptic peptide fragment:

GHVPELYVDNNR

Predicted Peptide Mass MH+ = 1413.538

STIIYLPEFIR

Predicted Peptide Mass MH+ = 1351.6221

SLSTPYFLSGENFR

Predicted Peptide Mass MH+ = 1618.7923

Figure 6A

SEQ ID NO: 6 DnaC nucleotide *B. subtilis*

```
1   ATGACAGACC TTCTGAATGA CCGGCTTCCT CCGCAAAATA TAGAAGCCGA
51  ACAAGCCGTG TTAGGCGCTA TTTTTTTACA GCCGTCTGCT TTAACACTGG
101 CTTCAGAAGT ATTGATTCCA GATGATTCTT ATAGAATGTC CCACCAAAAA
151 ATCTATAATG CGATGCTGGT GCTCGGTGAC CGAGGTGAAC CGGTTGATCT
201 GGTGACAGTT ACATCAGAGC TTGCGAACAC AGACCTGCTG GAAGAAGTAG
251 GCGGTATTTT ATATTTTGACA GATATCGCAA ACTCGGTGCC GACAGCGGCT
301 AACATAGAAT ATTACGCGAA AATCGTTGAG GAAAAATCGA TTCTTCGCCG
351 ATTAATCAGA ACTGCGACAA CGATTGCTCA AGACGGGTAT ACCCGTGAGG
401 ATGAGGTCGA GGATTTACTC AGTGAAGCGG AAAAAACGAT TATGGAAGTG
451 GCACAGCGCA AAAACACGAG TGCCTTCCAA AATATTAAGG ACGTCCTTGT
501 CCAGACCTAT GATAATATCG AACAGCTTTA CAATCGAAAA GGTGATATCA
551 CGGGAATTCC AACAGGGTTT ACGGAGCTTG ACCGGATGAC TCGGGGTTTC
601 CAGCGCAACG ACTTGATCAT TGTGGCTGCC CGTCCTTCAG TAGGGAAAAC
651 AGCCTTTGCC CTGAACATCG CACAAAACGT GGCGACGAAG ACCGATGAGA
701 GCGTAGCGAT TTTCAGTCTT GAGATGGGTG CCGAGCAGCT CGTTATGCGT
751 ATGCTCTGTG CCGAGGGGAAA TATCAATGCC CAGAATCTCC GTACAGGTAA
801 CCTGACCGAA GAGGATTGGG GCAAGCTGAC GATGGCAATG GGAAGCCTAT
851 CGAACAGCGG GATTTACATC GATGATACAC CGGGTATTCT AGTGAGTGAA
901 ATCCGTGCCA AGTGCCGCCG CTTGAAGCAG GAAAGCGGGC TGGGCATGAT
951 TTTGATCGAT TACCTGCAAT TGATTCAGGG AAGCGGTCGT TCAAAGGACA
1001 ACCGTCAGCA GGAAGTATCT GAAATTTCCC GTGAACTGAA GTCGATTGCG
1051 AGGGAGCTGC AAGTCCCTGT TATCGCGCTT TCTCAGCTTT CCAGGGGTGT
1101 TGAGCAGCGT CAGGATAAAC GTCCGATGAT GTCTGATATC CGGGAATCAG
1151 GAAGTATCGA GCAGGACGCG GATATTGTCT CGTTCCTTTA TCGTGATGAC
1201 TACTATGACA AAGAAACCGA GAATAAAAAT ATTATCGAAA TTATTATCGC
1251 CAAACAGCGT AACGGCCCGG TAGGAACCGT GTCTCTTGCG TTCGTAAAAG
1301 AATACAACAA ATTCGTCAAC CTGGAACGGC GTTTTGATGA CGCAGGCGTT
1351 CCGCCCGGCG CA
```

Figure 6B

SEQ ID NO: 7 DnaC nucleotide *S. aureus*

```
1  ATGGATAGAA TGTATGAGCA AAATCAAATG CCGCATAACA ATGAAGCTGA
51  ACAGTCTGTC TTAGGTTCAA TTATTATAGA TCCAGAATTG ATTAATACTA
101 CTCAGGAAGT TTTGCTTCCT GAGTCGTTTT ATAGGGGTGC CCATCAACAT
151 ATTTTCCGTG CAATGATGCA CTTAAATGAA GATAATAAAG AAATTGATGT
201 TGTAACATTG ATGGATCAAT TATCGACGGA AGGTACGTTG AATGAAGCGG
251 GTGGCCCCGA ATATCTTGCA GAGTTATCTA CAAATGTACC AACGACGCGA
301 AATGTTTCAGT ATTATACTGA TATCGTTTCT AAGCATGCAT TAAAACGTAG
351 ATTGATTCAA ACTGCAGATA GTATTGCCAA TGATGGATAT AATGATGAAC
401 TTGAACTAGA TGCGATTTTA AGTGATGCAG AACGTCGAAT TTTAGAGCTA
451 TCATCTTCTC GTGAAAGCGA TGGCTTTAAA GACATTTCGAG ACGTCTTAGG
501 ACAAGTGTAT GAAACAGCTG AAGAGCTTGA TCAAAATAGT GGTCAAACAC
551 CAGGTATACC TACAGGATAT CGAGATTTAG ACCAAATGAC AGCAGGGTTC
601 AACCGAAATG ATTTAATTAT CCTTGCAGCG CGTCCATCTG TAGGTAAGAC
651 TGC GTTTCGCA CTTAATATTG CACAAAAGT TGCAACGCAT GAAGATATGT
701 ATACAGTTGG TATTTTCTCG CTAGAGATGG GTGCTGATCA GTTAGCCACA
751 CGTATGATTT GTAGTTCTGG AAATGTTGAC TCAAACCGCT TAAGAACGGG
801 TACTATGACT GAGGAAGATT GGAGTCGTTT TACTATAGCG GTAGGTAAAT
851 TATCACGTAC GAAGATTTTT ATTGATGATA CACCGGGTAT TCGAATTAAT
901 GATTTACGTT CTAAATGTCG TCGATTAAAG CAAGAACATG GCTTAGACAT
951 GATTGTGATT GACTACTTAC AGTTGATTCA AGGTAGTGGT TCACGTGCGT
1001 CCGATAACAG ACAACAGGAA GTTTCTGAAA TCTCTCGTAC ATTAAAAGCA
1051 TTAGCCCGTG AATTAGAATG TCCAGTTATC GCATTAAGTC AGTTATCTCG
1101 TGGTGTTGAA CAACGACAAG ATAAACGTCC AATGATGAGT GATATTCGTG
1151 AATCTGGTTC GATTGAGCAA GATGCCGATA TCGTTGCATT CTTATACCGT
1201 GATGATTACT ATAACCGTGG CGGCGATGAA GATGATGACG ATGATGGTGG
1251 TTTCGAGCCA CAAACGAATG ATGAAAACGG TGAAATTGAA ATTATCATTG
1301 CTAAGCAACG TAACGGTCCA ACAGGCACAG TTAAGTTACA TTTTATGAAA
1351 CAATATAATA AATTTACCGA TATCGATTAT GCACATGCAG ATATGATGTA
1401 A
```

Sequence 1 SEQ ID NO: 6 DnaC nucleotide *B. subtilis*(1471 letters)
Sequence 2 SEQ ID NO: 7 DnaC nucleotide *S. aureus*(1513 letters)

seq1	1	AT-GACAGACCTTCTGAATGACCGGCTTC--CTCCGCAAAATATAGAAGCCGAACAAGC	56
seq2	1	ATGGATAGA---ATGTATGAGCAAAATCAAATGCCGCATAACAATGAAGCTGAACAGTC	56
seq1	57	CGTGTTAGGCGCTATTTTTTTTACAGCC-GTCTGCCTTTAACACTGGCTTCAGAAGTATTGA	115
seq2	57	TGTCTTAGGTTCAATTATTATAGATCCAGAATTGATTAATACT-ACTCAGGAAGTTTTCG	115
seq1	116	TTCCAGATGATTTCTATAGAATGTCCCACCAAAAAATCTATAATGCGATGCTGGTGTCTCG	175
seq2	116	TTCCTGAGTCGTTTTATAGGGGTGCCCATCAACATATTTTCCGTGCAATGATGCACTTAA	175
seq1	176	GTGACCGAGGTGAACCGGTTGATCTGGTGACA--GTTACATCAGAGCTTGCGAACACAGA	233
seq2	176	ATGAAGATAATAAAGAAATTGATGTTGTAACATTGATGGATC--AATTATCGACGGAAGG	233
seq1	234	CCTGCTGGAAGAAGTAGGCGGTATTTTCATAT-TTG-ACAGATATCGCAAACCTCGGTGCCG	291
seq2	234	TACGTTGAATGAAGCGGGTGGCCCGCAATATCTTGCAGAGTTATCTACAAAT--GTACCA	291
seq1	292	ACAGCGGCTAACATAGAATATTACGCGAAAAATCGTTGAGGAAAAATCGATT-CTTCGCCG	350
seq2	292	ACGACGCGAAATGTTTCAGTATTATACTGATATCGTT-TCTAAGCATGCATTAAACGTAG	350
seq1	351	ATTAATCAGAACTGCGACAACGATTGCTCAAGACGGGTATACCCGTGAGGATGAGGTCGA	410
seq2	351	ATTGATTCAAACCTGCAGATAGTATTGCCAATGATGGATATAATGATGAACCTGAACTAGA	410
seq1	411	--GGATTTACTCAGTGAAGCGGAAAAAACGATTATGGAAGTGGCA-CAGCGCAAAAACAC	467
seq2	411	TGCGATTT--TAAGTGATGCAGAACGTGCAATTTTAGAGCTATCATCTTCTCGTGAAAGC	468
seq1	468	GAGTGCCTTCCAAAATATTAAGGACGTCTTGTCCAGACCTATGATAATATC-GAACAGC	526
seq2	469	GA-TGGCTTTAAAGACATTCGAGACGTCTTAGGACAAGTGTATGA-AACAGCTGAAGAGC	526
seq1	527	TTTACAATCGAAAAGGTGAT--ATCA-CGGGAATTCCAACAGGGTTTACGGAGCTTGACC	583
seq2	527	TT---GATCAAAATAGTGGTCAAACACCAGGTATACCTACAGGATATCGAGATTTAGACC	583
seq1	584	GGATGACTGCGGGTTTCCAGCGCAACGACTTGATCATTGTGGCTGCCCGTCCTTCAGTAG	643
seq2	584	AAATGACAGCAGGGTTCAACCGAAATGATTTAATTATCCTTGCAGCGCGTCCATCTGTAG	643
seq1	644	GGAAAACAGCCTTTGCCCTGAACATCGCACAAAACGTGGCGAC---GAAGACCGATG-A	698
seq2	644	GTAAGACTGCGTTTCGCACTTAATATTGCACAAAAGTTGCAACGCATGAAGA--TATGTA	701

Figure 6C Cont.

seq1	699	GAGCGTAGCGATTTTTCAGTCTTGAGATGGGTGCCGAGCAGCTCGTTATGCGTATGCTCTG	758
seq2	702	TACAGTTGGTATTTTCTCGCTAGAGATGGGTGCTGATCAGTTAGCCACACGTATGATTTG	761
seq1	759	TGCCGAGGGAAATATCAATGCCCAGAATC---TCCGTACAGGTAACCTGACCGAAGAGGA	815
seq2	762	TAGTTCTGGAAATGT---TGACTCAAACCGCTTAAGAACGGGTACTATGACTGAGGAAGA	818
seq1	816	TTGGGGCAAGCTGACGATGGCAATGGGAAGCCTATCGAACAGCGGGATTACATCGATGA	875
seq2	819	TTGGAGTCGTTTTACTATAGCGGTAGGTAAATTATCACGTACGAAGATTTTTATTGATGA	878
seq1	876	TACACCGGGTATTCGAGTGAGTGAAATCCGTGCCAAGTGCCGCCGCTTGAAGCAGGAAAAG	935
seq2	879	TACACCGGGTATTCGAATTAATGATTTACGTTCTAAATGTCGTCGATTAAAGCAAGAACA	938
seq1	936	CGGGCTGGGCATGATTTTGATCGATTACCTGCAATTGATTCAGGGAAGCGGT---CGTTC	992
seq2	939	TGGCTTAGACATGATTGTGATTGACTACTTACAGTTGATTCAAGGTAGTGGTTCACGTGC	998
seq1	993	AAAGGACAACCGTCAGCAGGAAGTATCTGAAATTTCCCGTGAAGTGAAGTCGATTGCGAG	1052
seq2	999	GTCCGATAACAGACAACAGGAAGTTTCTGAAATCTCTCGTACATTAAAAGCATTAGCCCCG	1058
seq1	1053	GGAGCTGCAAGTCCCTGTTATCGCGCTTTCTCAGCTTTCCAGGGGTGTTGAGCAGCGTCA	1112
seq2	1059	TGAATTAGAATGTCCAGTTATCGCATTAAAGTCAGTTATCTCGTGGTGTGAACAACGACA	1118
seq1	1113	GGATAAACGTCCGATGATGTCTGATATCCGGGAATCAGGAAGTATCGAGCAGGACCGCGA	1172
seq2	1119	AGATAAACGTCCAATGATGAGTGATATTTCGTGAATCTGGTTCGATTGAGCAAGATGCCGA	1178
seq1	1173	TATTGTGCGGTTTCCTTTATCGTGATGACTACT-----ATGA	1208
seq2	1179	TATCGTTGCATTCTTATACCGTGATGATTACTATAACCGTGGCGGCGATGAAGATGATGA	1238
seq1	1209	CAAAGA-----AACCGA--GAATAAAA--ATATTATCGAAATTATTAT	1247
seq2	1239	CGATGATGGTGGTTTTGAGCCACAAACGAATGATGAAAACGGTGAAATTGAAATTATCAT	1298
seq1	1248	CGCCAAACAGCGTAACGGCCCCGGTAGGAACCGTGTCTCTTGC-GTTCGTAAAAAGAATACA	1306
seq2	1299	TGCTAAGCAACGTAACGGTCCAACAGGCACAGT-TAAGTTACATTTTATGAAACAATATA	1357
seq1	1307	ACAAATTCGTCAACCTGGAACGGCGTTTTGATGACGCAGGCGTTCCGCCCCGGCGCA	1362
seq2	1358	ATAAATT---TACCGATATCG--ATTATGCACATGCAGATATGATG-----TAA	1401

Figure 6D

SEQ ID NO: 8 DnaC *B. subtilis*

```
1   MTDLLNDRLP PQNIEAEQAV LGAIFLQPSA LTLASEVLIP DDFYRMSHQK
51  IYNAMLVLGD RGEVVDLVTV TSELANTDLL EEVGGISYLT DIANSVPTAA
101 NIEYYAKIVE EKSILRRLIR TATTIAQDGY TREDEVEDLL SEAEKTIMEV
151 AQRKNTSAFQ NIKDVLVQTY DNIEQLYNRK GDITGIPTGF TELDRMTAGF
201 QRNDLIIVAA RPSVGKTAFALNIAQNVATK TDESVAIFSL EMGAEQLVMR
251 MLCAEGNINA QNLRTGNLTE EDWGKLTAM GSLSNSGIYI DDTPGIRVSE
301 IRAKCRRLKQ ESGLGMILID YLQLIQGSGR SKDNRQQEVS EISRELKSIA
351 RELQVPVIAL SQLSRGVEQR QDKRPMMSDI RESGSIEQDA DIVAFLYRDD
401 YYDKETENKN IIEIIIAKQR NGPVGTVSLA FVKEYNKFVN LERRFDDAGV
451 PPGA
```

SEQ ID NO: 9 DnaC *S. aureus*

```
1   MDRMYEQNQPHNNEAEQSV LGSIIIDPEL INTTQEVLLP ESFYRGAHQH
51  IFRAMMHLNE DNKEIDVVTLMQDLSTEGTL NEAGGPQYLA ELSTNVPTTR
101 NVQYYTDIVS KHALKRRLIQ TADSIANDGY NDELELDAIL SDAERRILEL
151 SSSRES DGFK DIRDVLGQVY ETAEELDQNS GQTPGIPTGY RDLDQMTAGF
201 NRNDLIILAA RPSVGKTAFALNIAQKVATH EDMYTVGIFS LEMGADQLAT
251 RMICSSGNVD SNRLRTGTMT EEDWSRFTIA VGKLSRTKIF IDDTPGIRIN
301 DLRSKCRRLK QEHLDMIVI DYQLIQGSG SRASDNRQQE VSEISRTLKA
351 LARELECPVI ALSQLSRGVE QRQDKRPMMS DIRESGSIEQ DADIVAFLYR
401 DDYYNRGGDE DDDDDGGFEP QTNDENGEIE IIIAKQRNGP TGTVKLHFMK
451 QYNKFTDIDY AHADMM
```

Figure 6E

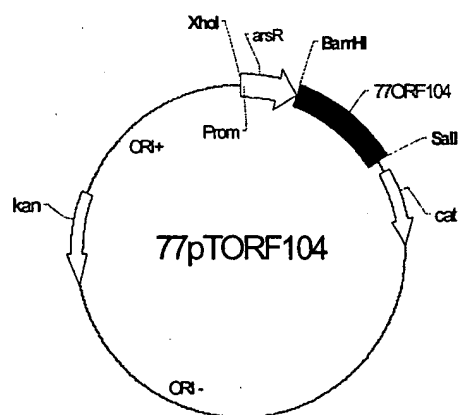
Sequence 1 SEQ ID NO: 8 DnaC *B. subtilis*(490 letters)

Sequence 2 SEQ ID NO: 9 DnaC *S. aureus* (503 letters)

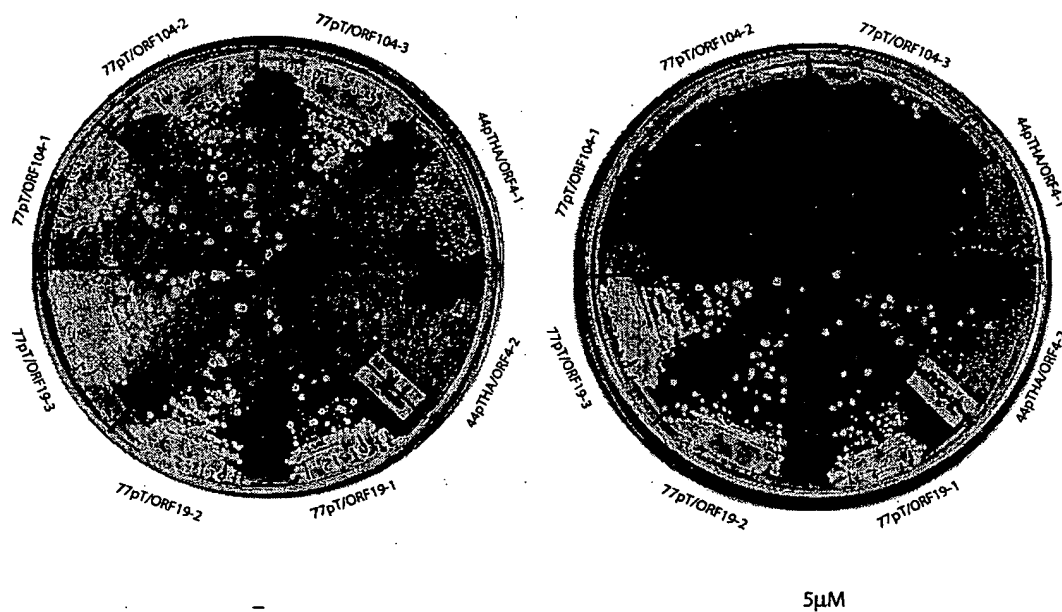
seq1	1	MTDLLNDRLPQNIIEAQAVLGAIFLQPSALTASEVLIPDDFYRMSHQKIYNAMLVLGD	60
		: : : : : : : :	
seq2	1	MDRMYEQNQMPHNNEAEQSVLGSIIIDPELINTTQEVLLPESFYRGHAIHIFRAMMHLNE	60
seq1	61	RGEPVDLVTVTSELANTDLLEEVGGISYLTDIANSVPTAANIEYYAKIVEEKSILRRLIR	120
		: : : : : : : : : : : :	
seq2	61	DNKEIDVVTLMQDLSTEGTLNEAGGPQYLAELSTNVPTTRNVQYYTIDIVSKHALKRRLIQ	120
seq1	121	TATTIAQDGYTREDEVEDLLSEAEKTIMEVAQRKNTSAFQNIKDVLVQTYDNIEQLYNRK	180
		: : : : : : : : : : : : :	
seq2	121	TADSIANDGYNDELELDAILSDAERRILELSSSRESDGFKDIRDVLGQVYETAELDQNS	180
seq1	181	GDITGIPTGFTELDRMTAGFQRNDLIIVAARPSVGKTAFALNIAQNVATKTD-ESVAIFS	239
		: : :	
seq2	181	GQTPGIPTGYRDLQMTAGFNRNDLIILAARPSVGKTAFALNIAQKVATHEDMYTVGIFS	240
seq1	240	LEMGAELVMRMLCAEGNINAQNLRGTGNLTEEDWGKLTAMGSLSNSGIYIDDTPGIRVS	299
		: : : : : : : : : : : : :	
seq2	241	LEMGAQLATRMICSSGNVDSNRLRTGTMTTEEDWSRFTIAGVGLSRTKIFIDDTPGIRIN	300
seq1	300	EIRAKCRRLKQESGLMILIDYLQLIQGSG-RSKDNRQQEVSEISRELKSIARELQVPVI	358
		: : : : : :	
seq2	301	DLRSKCRRLKQEHGLMIVIDYLQLIQGSGSRASDNRQQEVSEISRTLKALARELECPVI	360
seq1	359	ALSQLSRGVEQRQDKRPMSDIRESGSIEQDADIVAFLYRDDYYDK-----	404
		: :	
seq2	361	ALSQLSRGVEQRQDKRPMSDIRESGSIEQDADIVAFLYRDDYYNRGGDEDDDDGGFEP	420
seq1	405	ETENKN-IIIEIIIAKQRNGPVGTVSLAFVKEYNKFVNLERRFDDAGVPPGA	454
		: : : : :	
seq2	421	QTNDENGEIEIIIAKQRNGPTGTVKLHFMKQYNKFTDIDYAHADM-----M	466

FIGURE 7

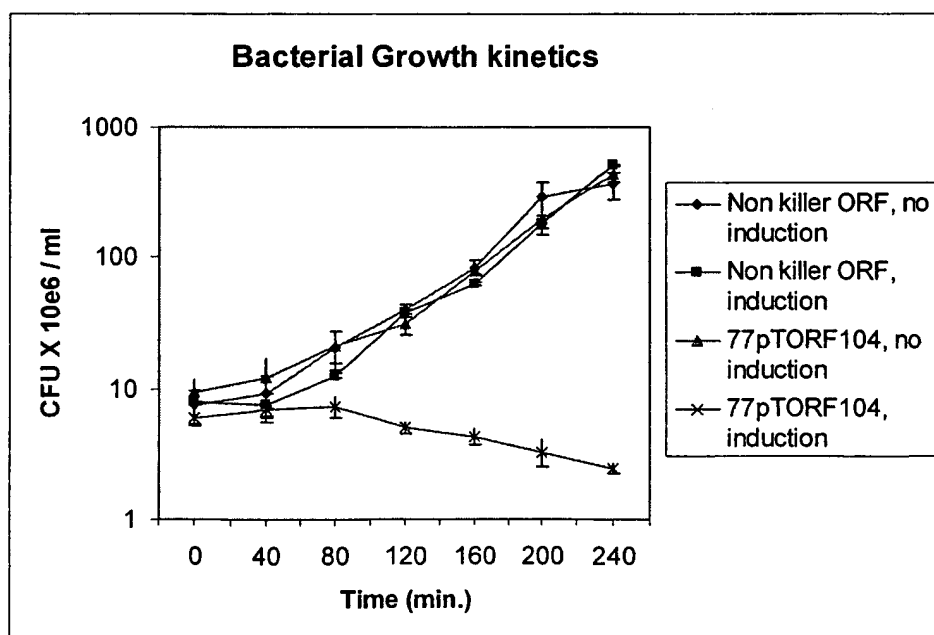
7A-



7B-



7C-



GST

GST/ORF104

ACB 0 0.1 0.5 1.0 2.0 ACB 0 0.1 0.5 1.0 2.0 Mr

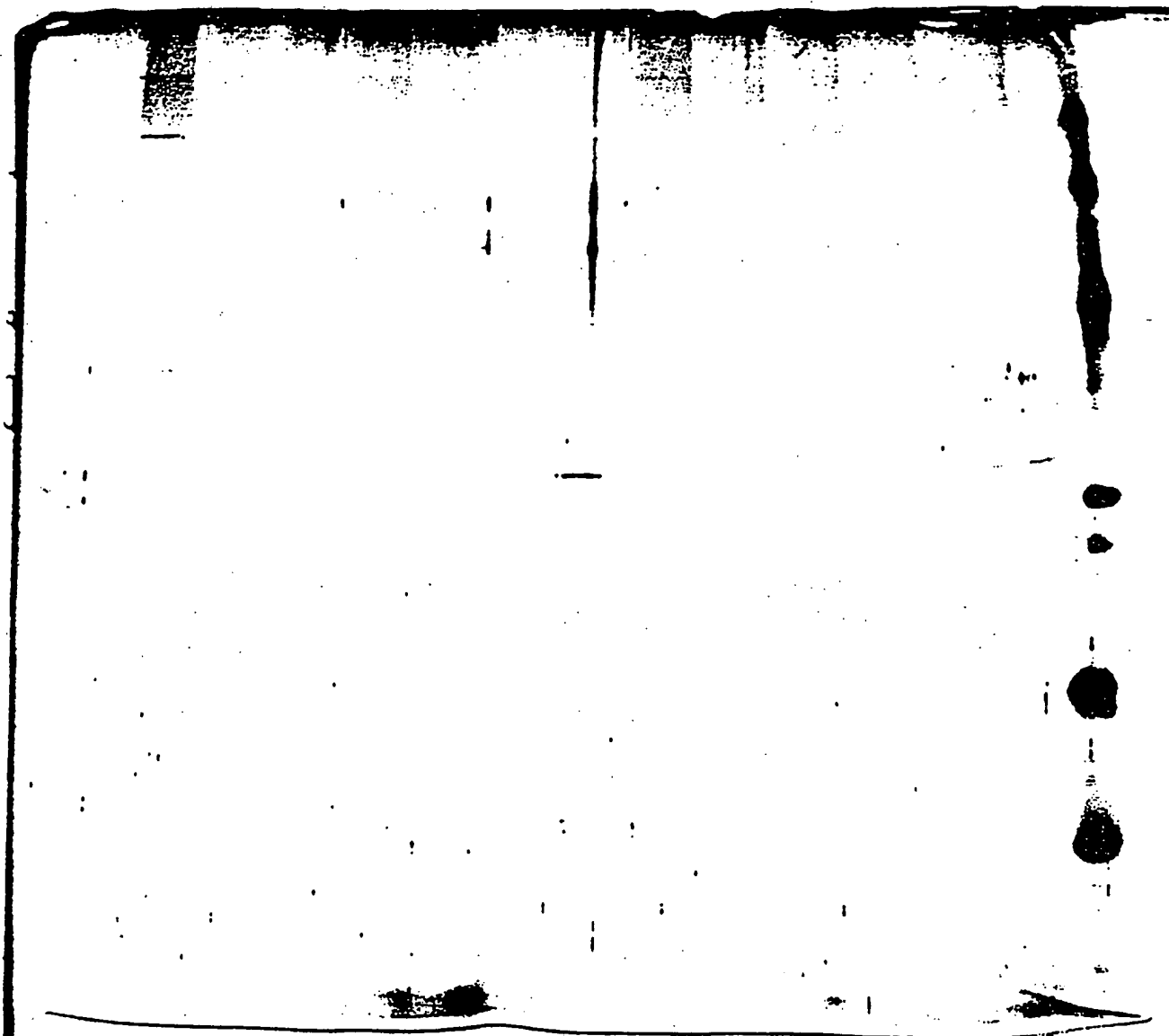


Fig. 8 A

ACB 0 0.1 0.5 1.0 2.0 Mr

ACB 0 0.1 0.5 1.0 2.0

Mr

83

GST

GST/ ORF104

Mr ACB 0 0.1 0.5 1.0 2.0 ACB 0 0.1 0.5 1.0 2.0

97

66

45

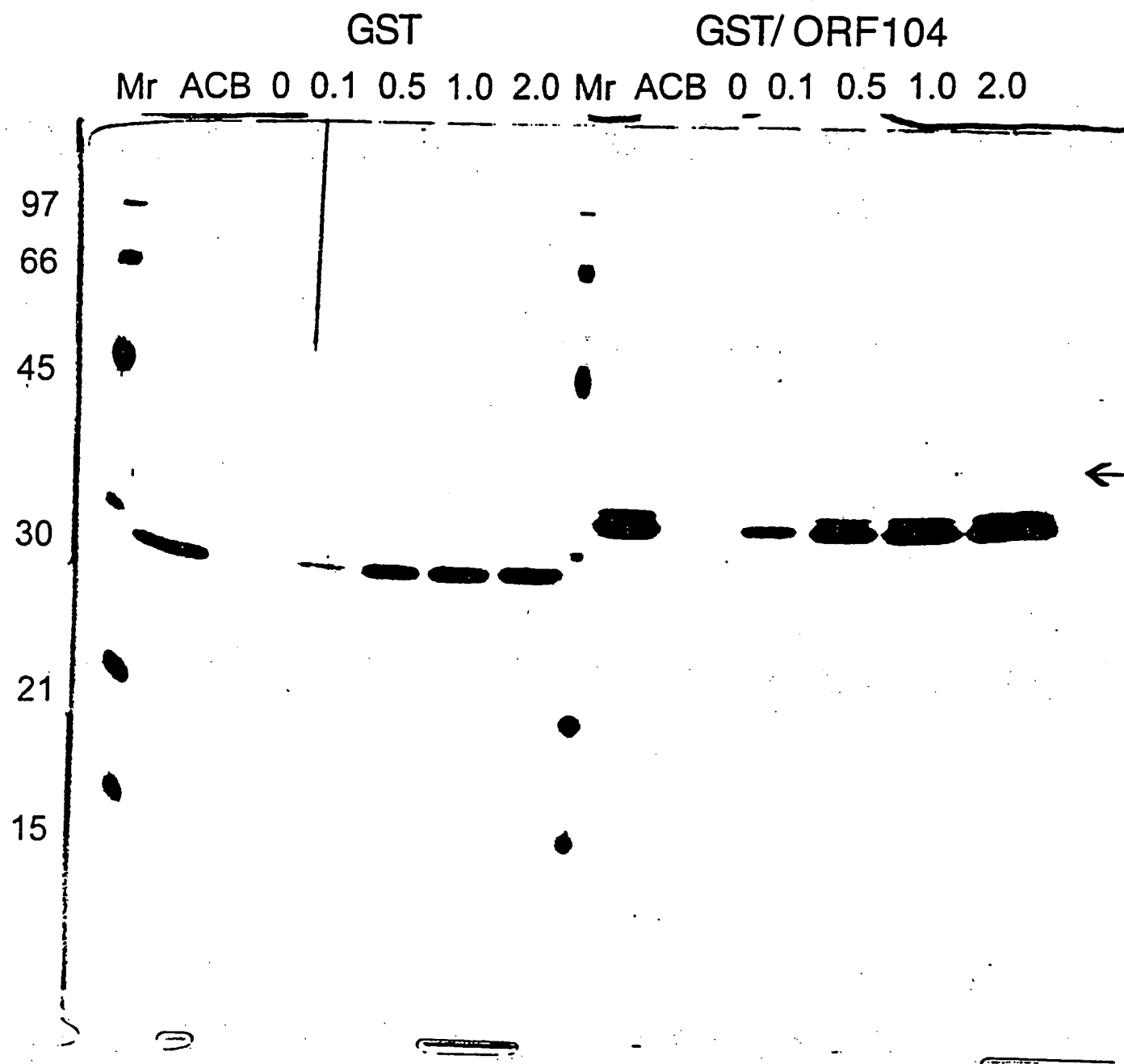
30

21

15



8C



8D

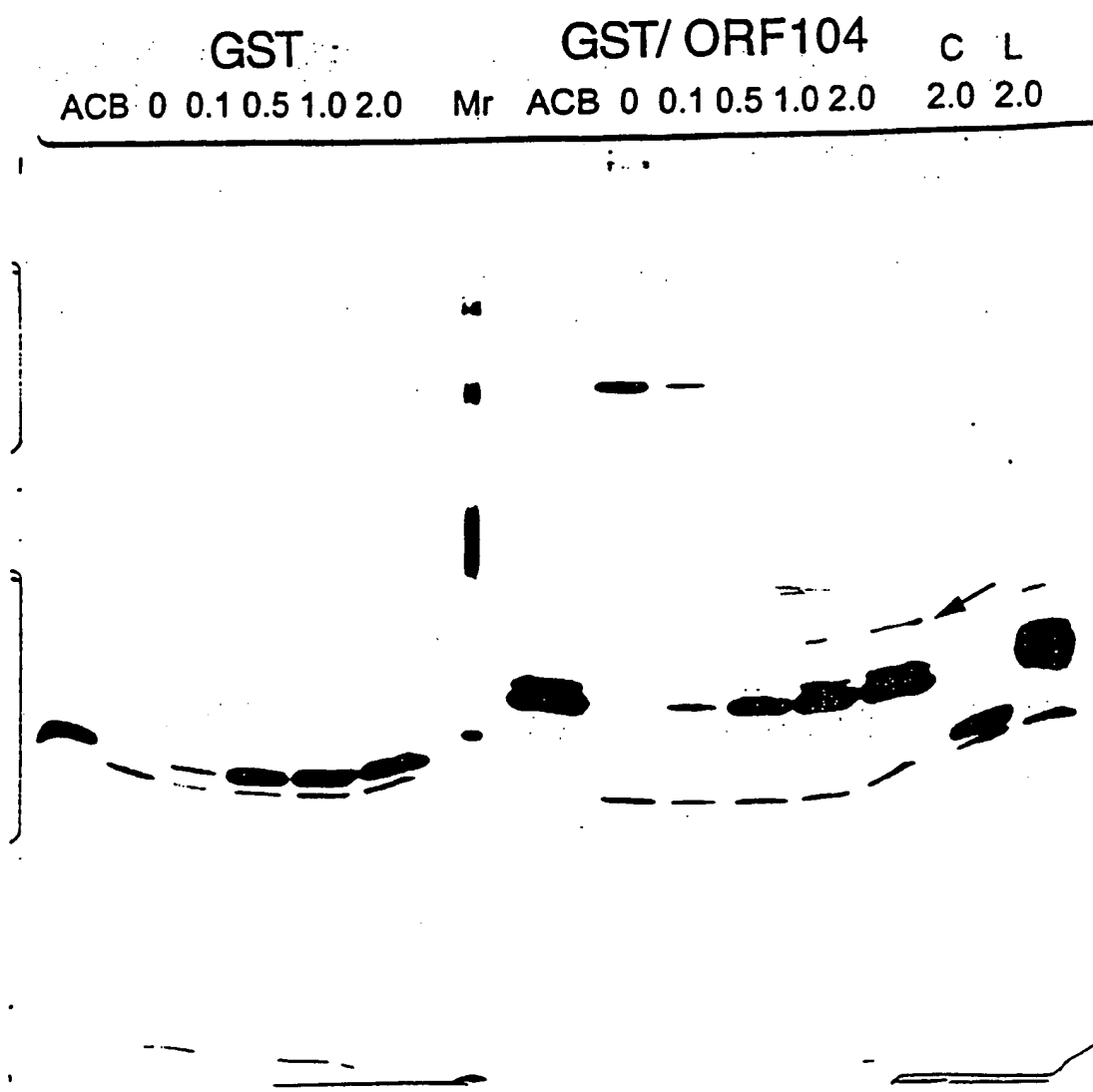


Fig. 9

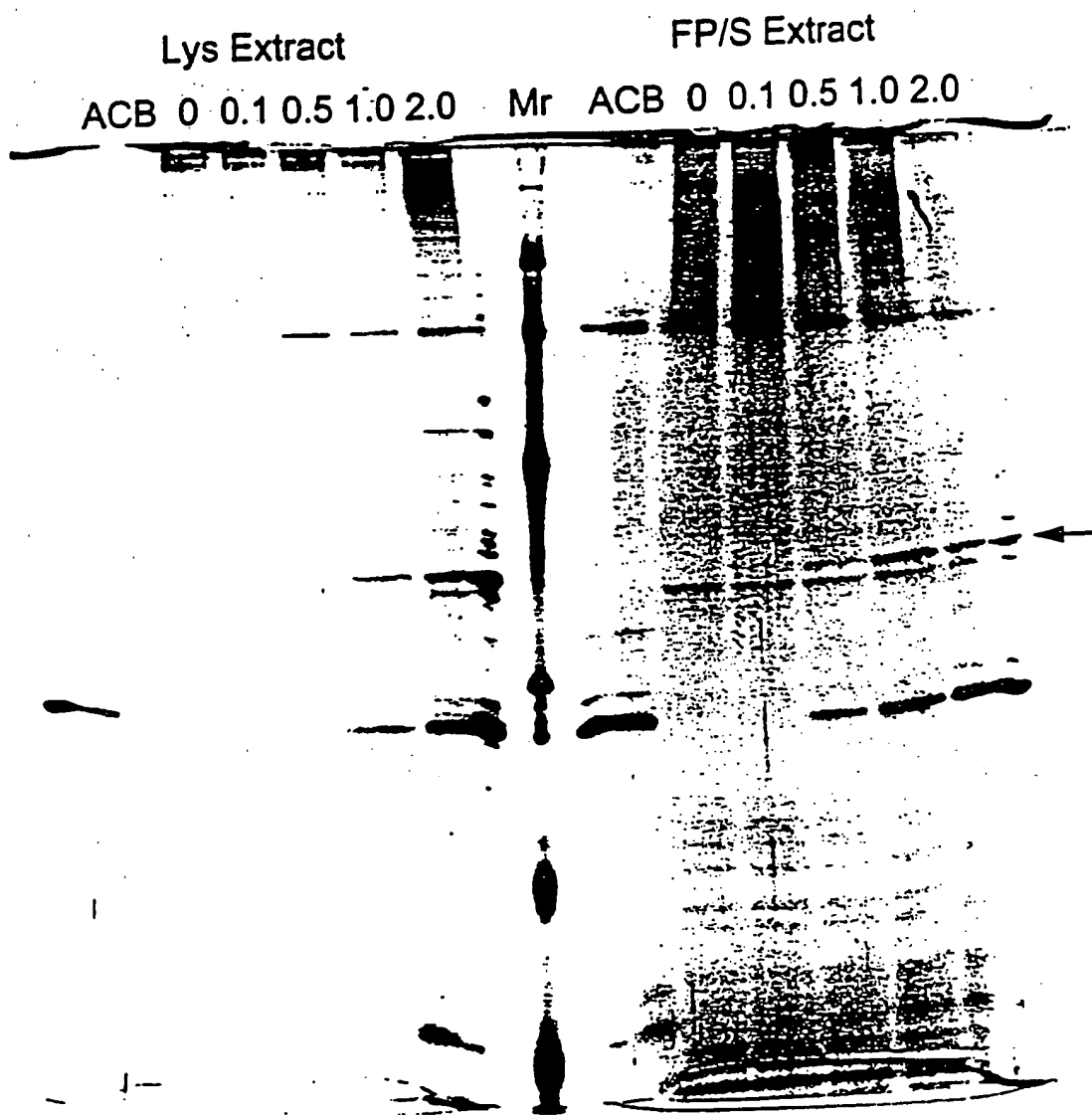
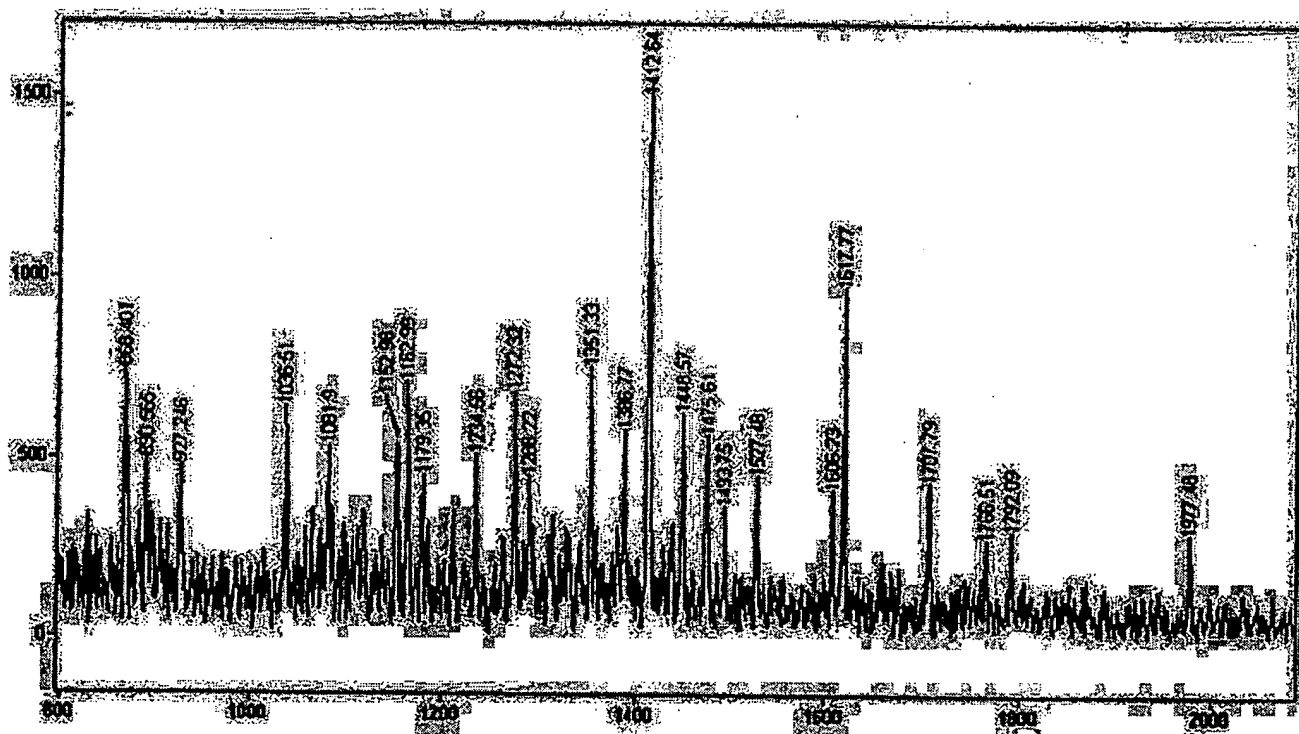


Fig. 10

Figure 11

i) Tryptic peptide mass spectrum of interacting protein (1% Triton X-100 elute)



ii) Tryptic peptide mass spectrum of interacting protein (1% SDS eluate)

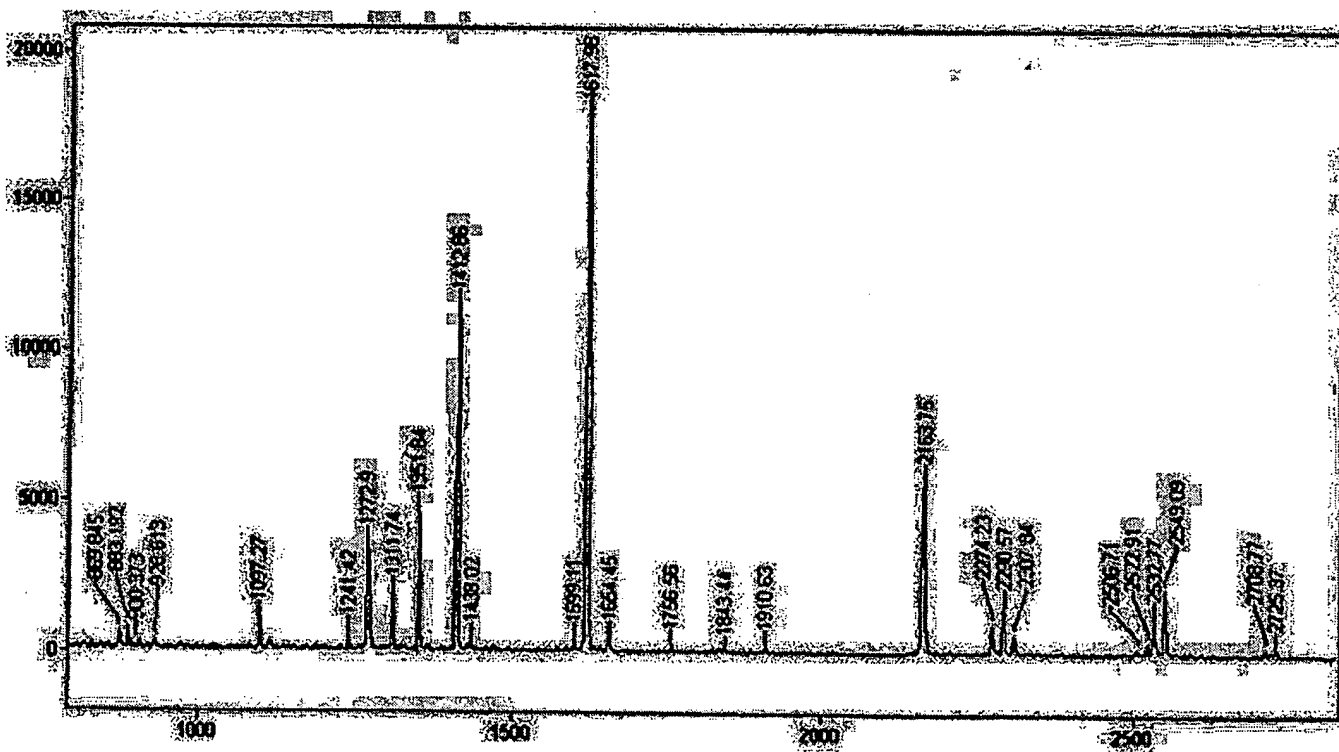


Figure 12

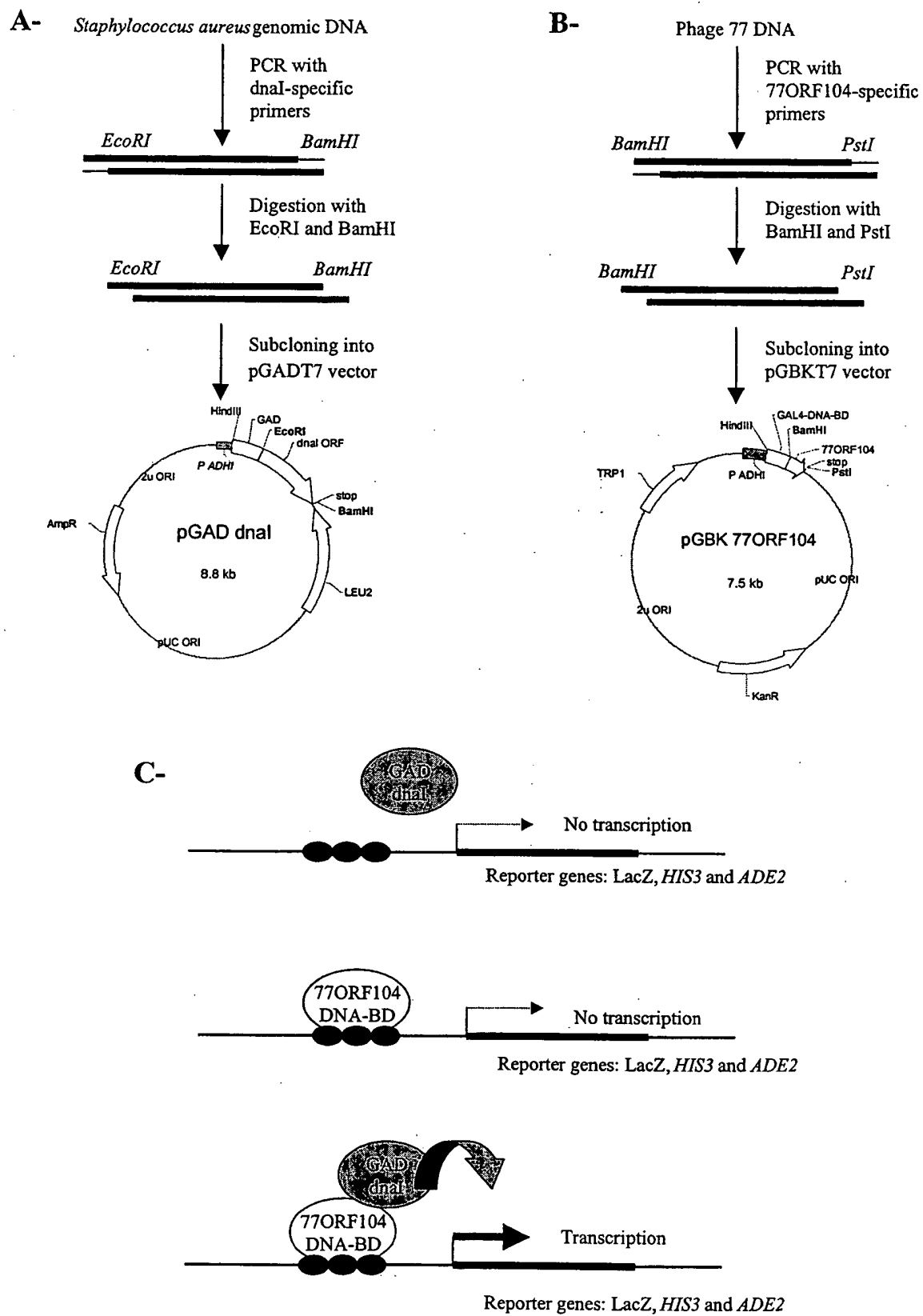
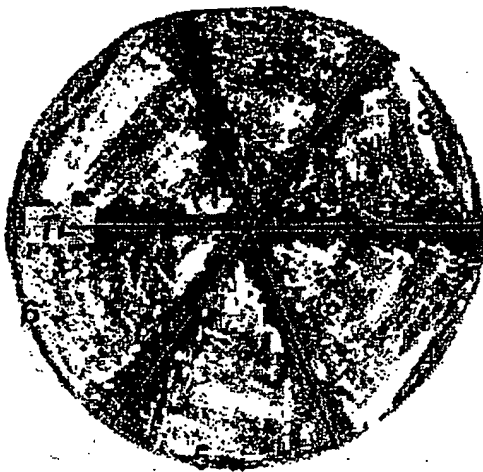
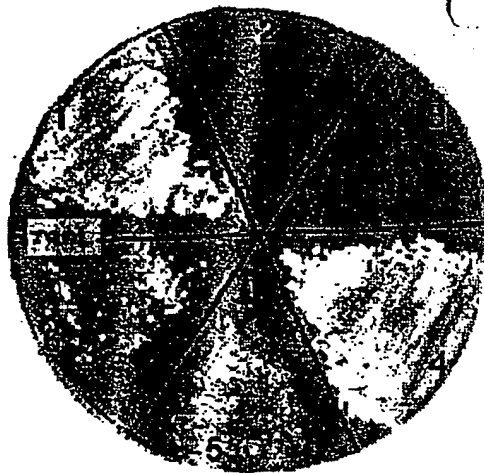


Fig 12 D+E



SD plate without Trp and Leu



SD plate without Trp, Leu, His and Ade

- 1) pGBKT7-53 and pGADT7-T
- 2) pGBKT7-53 and pGAD dna I
- 3) pGBK77ORF104 and pGADT7-T
- 4) pGBKT7-LAM and pCL1
- 5) pGBK77ORF104 and pGAD dna I
- 6) pGBK dna I and pGAD77ORF104

E)

Luminescent β -Galactosidase Assay

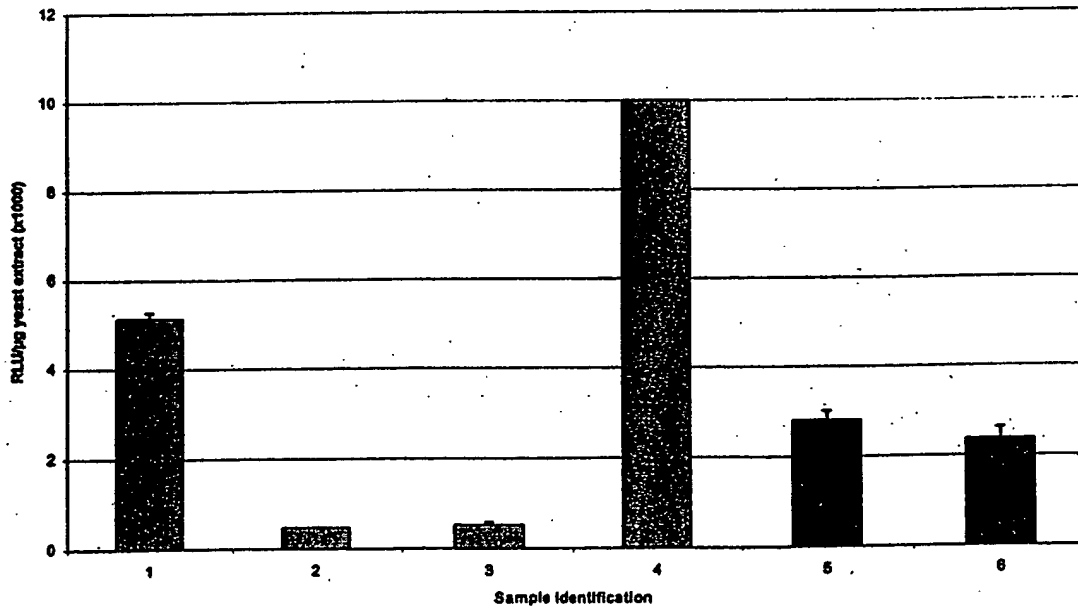


Fig. 13

Effect of 77ORF 104 expression on 3H-Thymidine incorporation

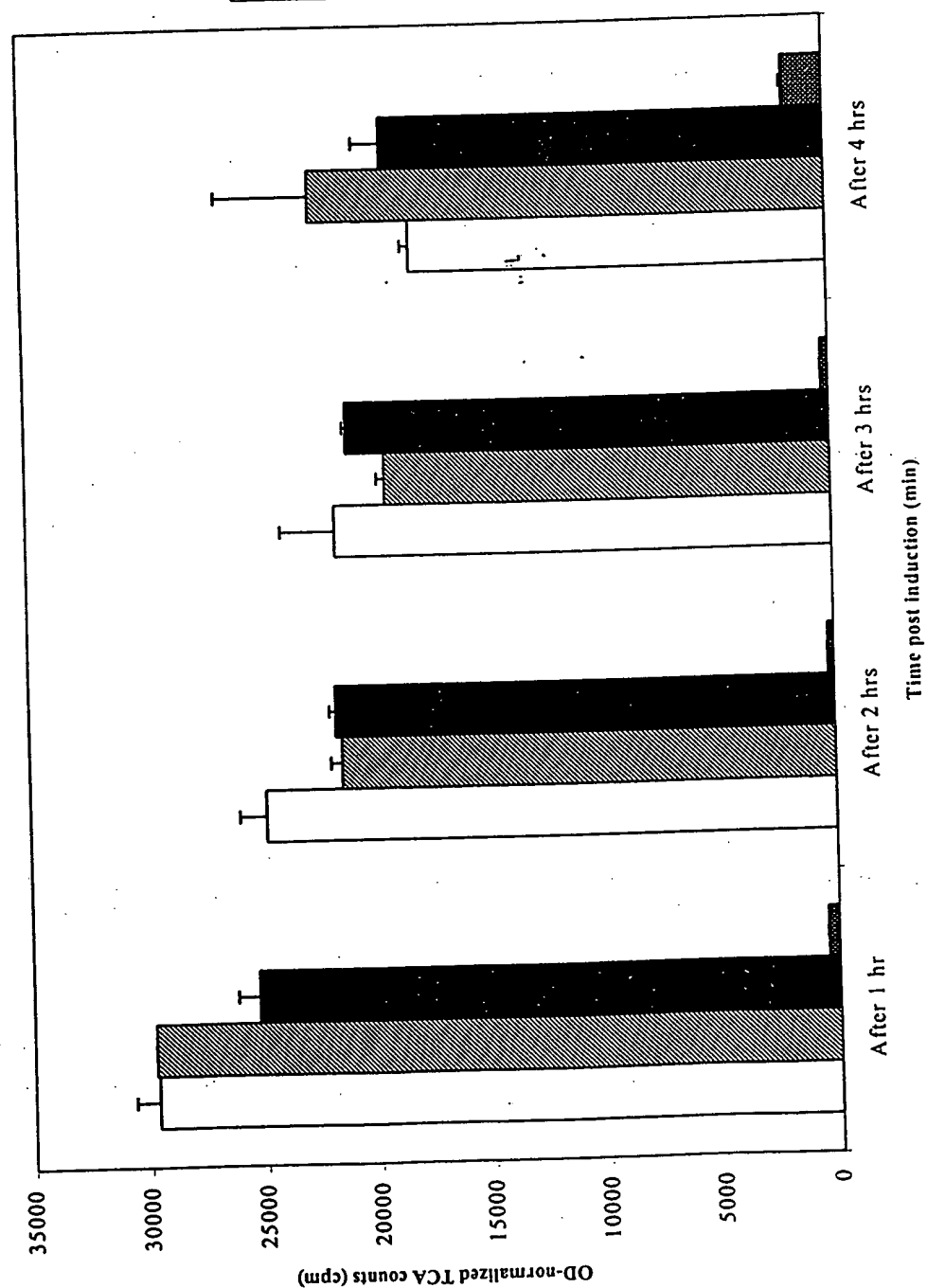


FIGURE 14A

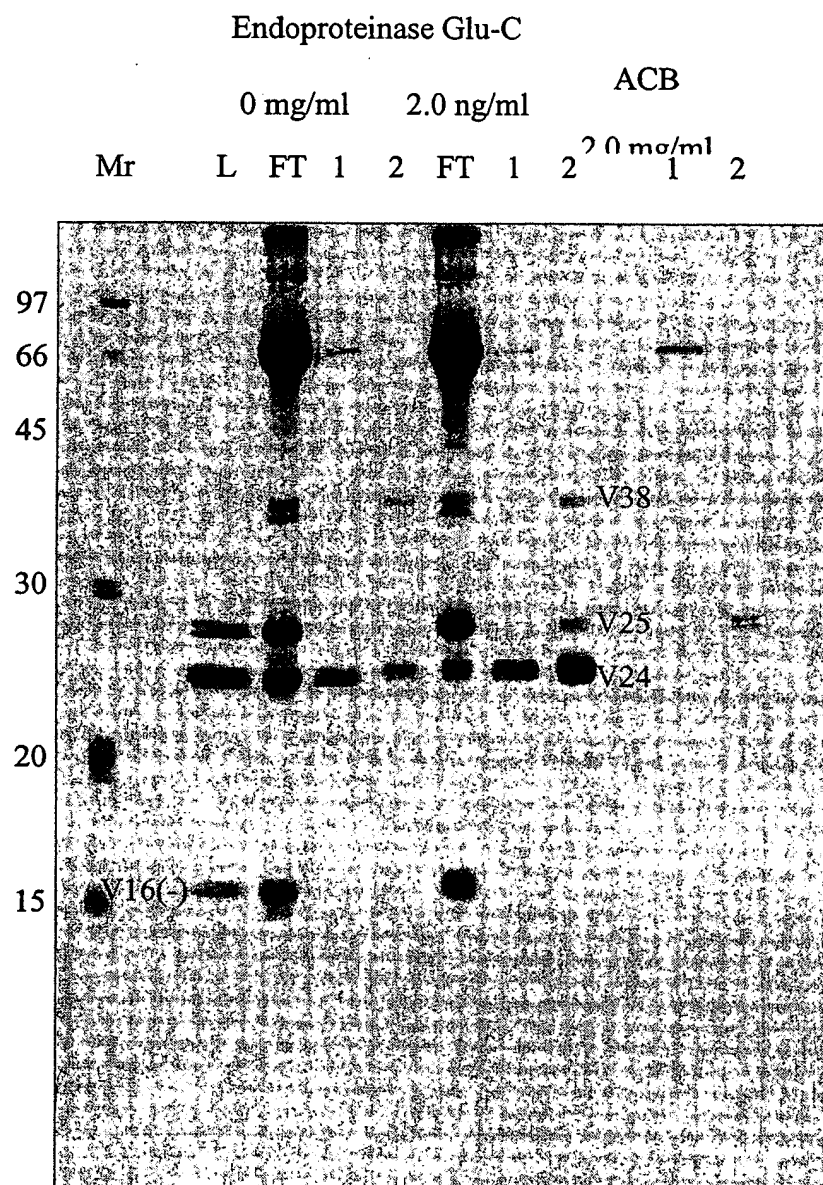


FIGURE 14B

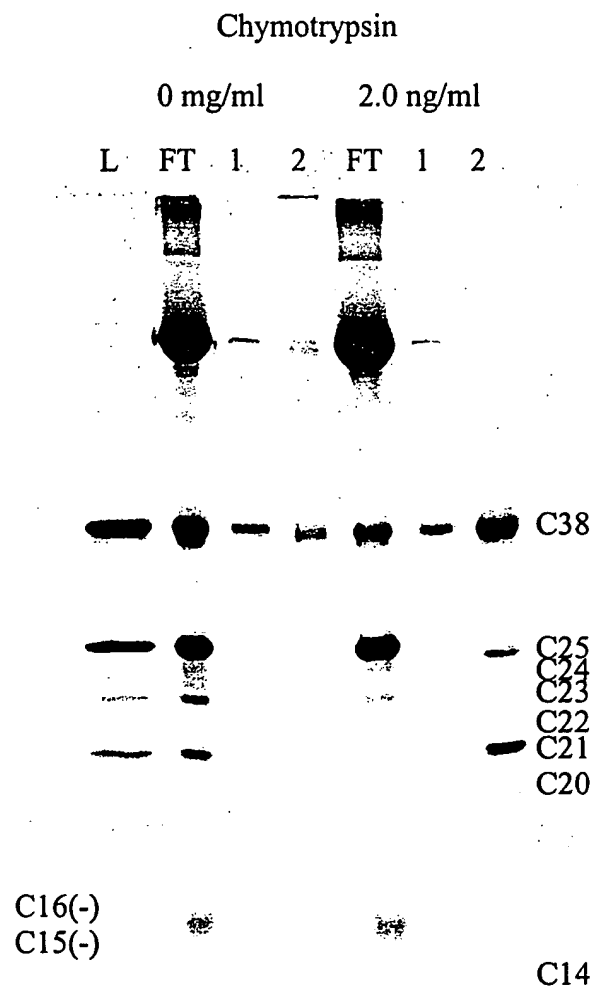


FIGURE 14C

Amino acid residues corresponding to interacting partial
proteolytic fragments.

Protease	Proteolytic fragment ID (from Fig. 14A, B)	ID of SEQ ID NO: 2 fragment interacting with 77ORF104	
		from amino	to carboxyl
Endoproteinase Glu-C	V24	117	313
	V24	119	313
Chymotrypsin	C38	12	313
	C25	83	313
	C24	77	305
	C23	77	304
	C22	116	313
	C21	131	313
SEQ ID NO: 2	Complete	1	313

FIGURE 15

SEQ ID NO: 16

>*S.aureus* dnaI : amino acid 150-313

AADDICTAITNGEQVKGLYLYGPFGTGKSFILGAIANQLKSKKVRSTIIYLPEFIRTLKG
GFKDGSFEKKLHRVREANILMLDDIGAEVTPWVRDEVIGPLLHYRMVHELPTFFSSNFD
YSELEHHLAMTRDGEKTKAARIIERVKSLSTPYFLSGENFRNN

SEQ ID NO: 17

>*S.aureus* dnaI : nucleotide 448-942

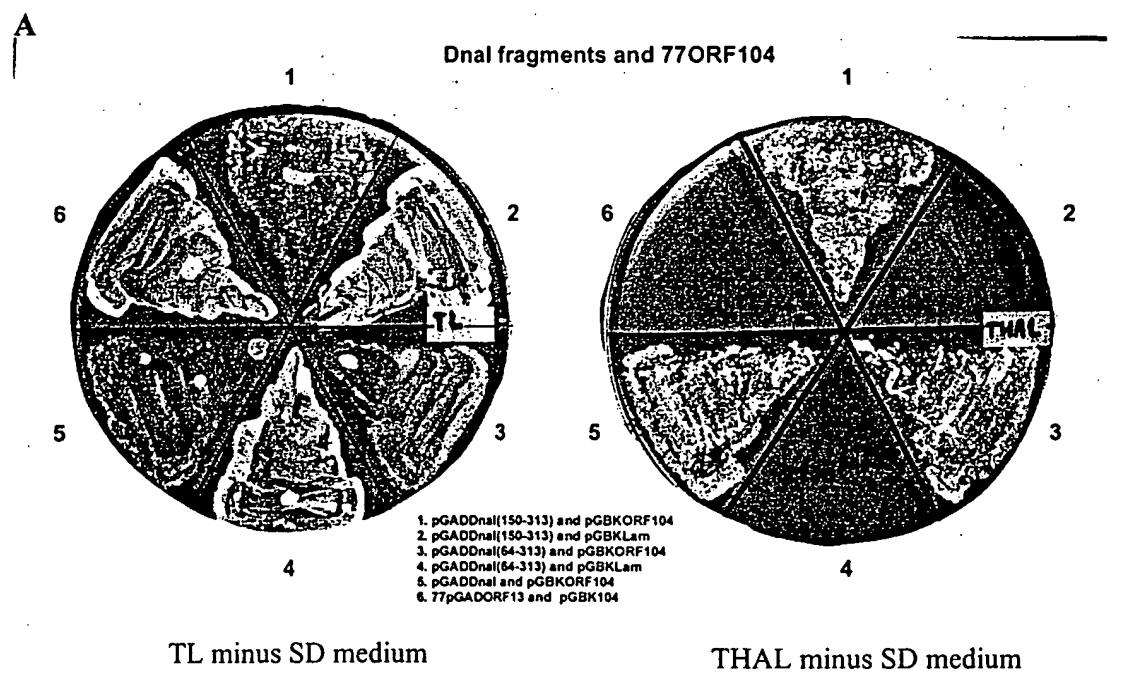
gcagcagatgatatttgtacagcaataactaatggggaacaagtgaaaggcctttacctt
tatgggccatttgggacaggtaaatcttttattctaggtgcaattgcgaatcagctcaa
tctaagaaggtagcttcgacaattatttatttaccggaatttattagaacattaaaagg
ggctttaagatgggttcttttgaaaagaaattacatcgcgtaagagaagcaaacatttta
atgcttgatgatattggggctgaagaagtgactccatgggtgagagatgaggaattgga
cctttgctacattatcgatgggtcatgaattaccaacattcttttagttctaattttgac
tatagtgaattggaacatcatttagcgatgactcgtgatgggtgaagagaagactaaagca
gcacgtattattgaacgtgtcaaactctttgtcaacaccatactttttatcaggagaaaat
ttcagaaacaattga

SEQ ID NO: 18

>*S.aureus* dnaI : amino acid 64-313

YKDQQKHVDGHKFDPCPNFVKGHVPELYVDNNRIKIRYLQCPCKIKYDEERFEAELITSHH
MQRDTLNAKLKDIYMNHRDLVDVMAADDICTAITNGEQVKGLYLYGPFGTGKSFILGAI
ANQLKSKKVRSTIIYLPEFIRTLKGGFKDGSFEKKLHRVREANILMLDDIGAEVTPWVR
DEVIGPLLHYRMVHELPTFFSSNFDYSELEHHLAMTRDGEKTKAARIIERVKSLSTPYF
LSGENFRNN

FIGURE 16



B

			Interaction with 77 ORF 104
SEQ ID NO: 2		313	yes
SEQ ID NO: 18	64	313	yes
SEQ ID NO: 16	150	313	yes

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